WEBGATE
HD CCTV

HD-CCTV **DVR**

Full HD Digital Video Recorder

HD1600F-PDR Series
HDC801F-PD Series
HDC400F-PD Series

User's Manual

(EN Rev 1.2)

HD-CCTV DVR

Install & User Guide

HD-CCTV DVR Manual.

Thank you for purchasing a Webgate Digital Video Recorder.
Before installation or operation please become familiar with the user manual and other referenced manuals mentioned in the booklet.
User manual, software and hardware described here are protected by copyright by law. With the exception of copying for general use within fair use, copying and reprinting of the user manual, either partially or in entirety, or translating it into any another language without the consent of our Corporate office is strictly prohibited.

Product Warranty and Limited Responsibility

The manufacturer does not assume any responsibility concerning the sale of this product and does not delegate any right to any third party to take any responsibility on its behalf. The product warranty does not cover cases of accidents, negligence, alteration, misuse or abuse. No warranty is offered for any attachments or parts not supplied by the manufacturer.

The manufacturer does not assume any responsibility for followings

- ✓ Malfunctions due to negligence by user
- ✓ Deliberate disassembly and replacement by user
- ✓ Connection of power source other than a properly rated power source
- ✓ Malfunctions caused by natural disasters (fire, flood, tidal wave, etc)
- ✓ The warranty period for HDD is one year
- ✓ Any data damage due to HDD damage

The product is not for exclusive use of crime prevention but for assistance in cases as fire or theft. We take no responsibility for damage from any incident.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause
harmful interference in which case the user will be required to correct the interference at his own expense.

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)
This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB
cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.
Household users should contact either the retailer where they purchased this product or their local government office, for details of where and how they can take these items for environmentally safe recycling.
Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

Correct disposal of batteries in this product

(Applicable in the European Union and other European countries with separate battery return systems.)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.
To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.

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Introduction

Warning

Warning

- ✓ Please do not bend or press power cord by force which could lead to fire.
- ✓ Be careful not to pull or plug with wet hands to avoid fire or electric shock.
- ✓ In case of changing built-in lithium battery, it should be replaced with same brand or similar one to prevent a danger of explosion. Since old batteries could be a factor of environment contamination, please disposed of them properly.
- ✓ Do not throw the batteries in fire or heating units. Neither short circuit nor disassembly is prohibited.
- ✓ Do not recharge battery used for remote controller.
- ✓ Do not open the top cover otherwise it could lead to electric shock and product damage.
- ✓ The previous recorded data is deleted if record continues when HDD is full so please check disk setup status.
- ✓ Manufacturer takes no responsibility for any damaged data due to customer's carelessness or negligence.

A-rated device(Broadcasting Communication Equipment for business use only)

Users/Sellers should under this is A-rated device for business use only and it must not be used outside of family.

Caution

- ✓ Do not place heavy objects on top of the product.
- ✓ Product is for indoor use only and it is not water or damp proof. Use product to its environmental specifications (Temperature & Humidity). To clean the product, gently wipe the outside with a clean dry cloth.
- ✓ Product uses AC power of 110V ~ 240V. Be cautious not to cause electric damages to the product.
- ✓ Be careful not to drop the product. Physical shocks may harm the product including internal HDD. In addition, please do not throw or drop it.
- ✓ Product is made of metal you can hurt another human if you throw or used as a weapon. Keep away from the reach of children and install in a safe place.
- ✓ If Product does not operate properly, please contact the closest WEBGATE distributor for service. Tampering or disassembling the product will void the warranty.
- ✓ The product can transmit real time video over network or internet and can be used for monitoring purpose depending on installation sites. So please check and review related regulations before installation.

Experience and technical skills are needed for the installation of this product. Improper installation may cause fire, electric shocks, or defects. Contact the nearest Webgate dealer for installations.

Contents of the manual can differ according to firmware or Software upgrade, and the appearance of products may be changed for the improvement of quality without an advance notice

◈ System power off

In case user turn off device by force while device is working, it could give damage on HDD and device so please turn off device safely using power button located in the front panel. You should install a UPS system for safe operation in order to prevent damage caused by an unexpected power failure.

◈ Working Temperature

The working temperature of the product is 5°C~45°C or 41°F~113°F. DVR may not work properly if left in low temperature for a long period of time. If such is the case, then store at room temperature for some time before using it again.

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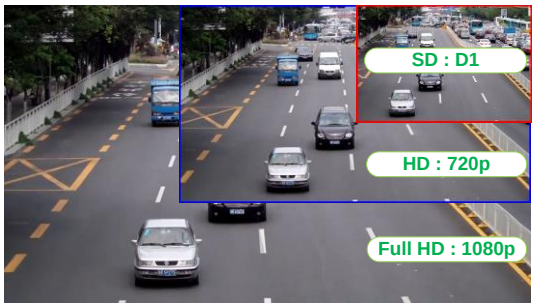
Key Features

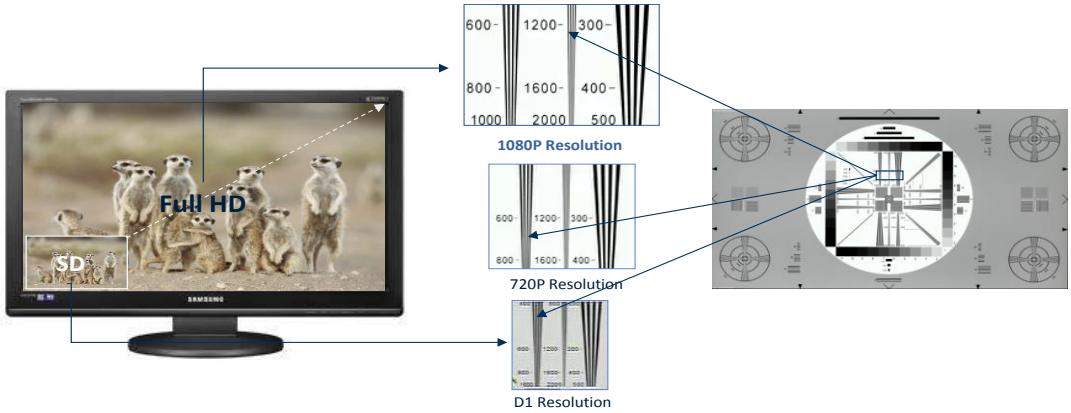
FULL HD *

This product supports live monitoring, recording, playback of HD-SDI video of 1080p(1920x1080).
Records 5 seconds before an event and records up to 30fps per channel.
HD-SDI video record
- HD 1080p : 480fps recording

✓ Supports manual & schedule recording at all times.
✓ Supports archiving event list(sensor, video loss, motion detection, Text)
✓ Max 5 seconds pre-alarm recording per each channel



FULL HD high quality video shows far superior resolution than SD video product. Over 1200 TV lines at 1080p resolution can be visible.



HD-SDI

The product can transfer HD (High-Definition) signal image using HD-SDI technology via coax cable. Please be noted that this product doesn't accept SD signal. The supportable resolution is as below.
✓ Transmission Method - SMPTE 292M : HD-SDI
✓ Resolution - SMPTE 274M : 1920x1080p 25/30Hz

PoC (Power over Coax) *

Supplies power to PoC Camera via Coaxial cable.
Connect Webgate's PoC camera & PoC adapter to DVR to supply power to PoC camera through a coaxial cable without extra power supplies.

CoC (Control over Coax) *

Via CoC Function, PoC can be controlled by a coaxial cable.
With CoC function, Webgate's PoC camera can control PoC camera via coaxial cable from DVR without RS-485 cable.

DoubleReach™ (Enhances transmission distance by Max. 400m) *

It is a technology that increases transmission distance by 400m for HD-SDI cameras.
Connect Webgate's DR101P-TX to HD-SDI camera to transmit HD-SDI video to a location 400m away and to use the camera through DR port(odd channel) on DVR.

* Varies between different models

RAID 1/5/10 Levels *

Supports RAID.
Via RAID MANAGER, various RAID Levels can be configured without additional RAID devices.(RAID 1/5/10)

Surveillance Screens

Every channel will display HD streams without interruptions and will offer many different types of screens.

- ✓ Various Surveillance Screen Mode - Single, Multi Screens (1,4,9,10,13,16,CustomA,B,C) *
- ✓ Auto Screen Sequence
- ✓ Event Pop-up

Voice Recording

Supports real time voice input and recording function.

- ✓ Real time 4ch voice input and recording function
- ✓ Input : 4ch RCA, Output : 1ch RCAI(Rear), 1ch HDMI(Rear)
- ✓ Audio recording and playback can be played Simultaneously

Search and Playback

Various useful functions for search & playback

- ✓ Simultaneous playback for every channel
- ✓ Playback by time, date, channel
- ✓ Time/ Calendar/Event/Thumbnail/Bookmark search
- ✓ Forward/backward search function of a freeze frame

Save and Backup

You can record video data into the internal HDD, and image can be copied to a USB memory.

- ✓ Backup device : USB stick
- ✓ External storage device : e-SATA HDD or NS04R(exclusive storage device) *

Network

Supports LAN, xDSL, and etc., and key functions can easily be controlled by web browser or customized CMS program.

- ✓ HD Live monitoring/playback/backup from the remote site
- ✓ Multi-streaming feature for slow network environment (supports nHD monitoring)
- ✓ Sending event info(image) using E-Mail/ FTP
- ✓ Recorded video playback, save, search function, and DVR control function on PC via CMS
- ✓ Supports 10/100/1000 Mbps Ethernet/xDSL
- ✓ Managing up to 1024 DVRs with CMS

Others

- ✓ User friendly GUI and mouse
- ✓ Easy and simple firmware upgrade, and recorded video back up function using USB stick
- ✓ Using Ac the PC Playback function, replay the DVR's HDD on a PC
- ✓ Supports PTZ control and PRESET function
- ✓ Easy control of up to 255 DVR with a single remote control

* Varies between different models

Specification by Models

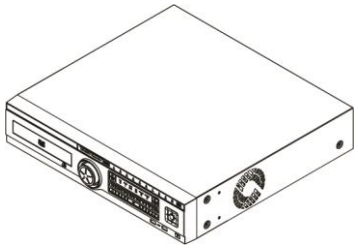
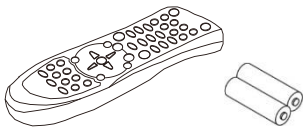
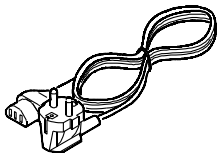
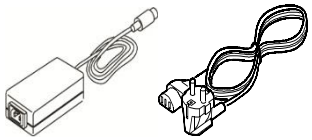
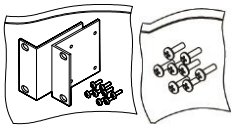
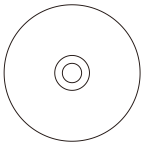
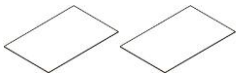
Model	CASE	HDD	Recording	PoC/CoC/DR	NS04R	RAID
HD1600F-PDR	Full	SATA*5 + eSATA	480 FPS	O	O	O
HD1600F-R	Full	SATA*5 + eSATA	480 FPS	X	O	O
HD1600F	Full	SATA*5 + eSATA	480 FPS	X	O	X
HD1600M-PDR	Full	SATA*5 + eSATA	120 FPS	O	O	O
HDC1601M	Middle	SATA*2 + eSATA	120 FPS	X	X	X
HD800F-PDR	Full	SATA*5 + eSATA	240 FPS	O	X	O
HD800F-R	Full	SATA*5 + eSATA	240 FPS	X	X	O
HDC801F-PD	Middle	SATA*2 + eSATA	240 FPS	O	X	X
HDC801F	Middle	SATA*2 + eSATA	240 FPS	X	X	X
HDC801H	Middle	SATA*2 + eSATA	120 FPS	X	X	X
HD400F-PDR	Full	SATA*5 + eSATA	120 FPS	O	X	O
HDC400F-PD	Small	SATA + eSATA	120 FPS	O	X	X
HDC400F	Small	SATA*2	120 FPS	X	X	X

(O : Supported / X : not-Supported)

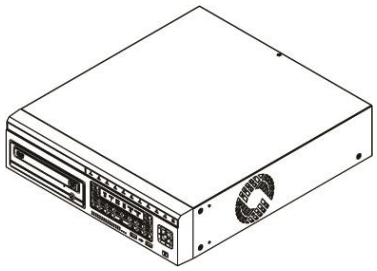
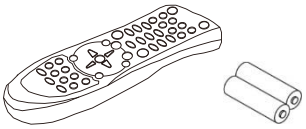
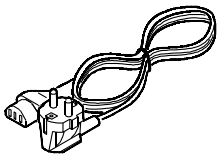
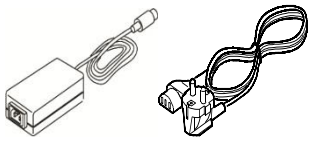
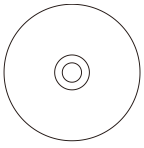
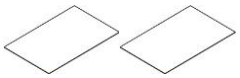
Components

Please check the below to make sure you have every part.

HD1600F-PDR / HD1600F-R / HD1600F / HD1600M-PDR
HD800F-PDR / HD800F-R / HD400F-PDR

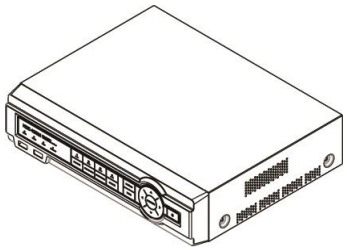
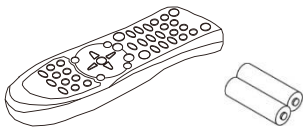
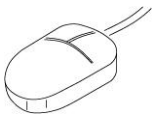
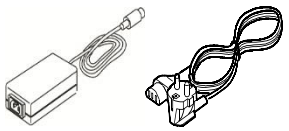
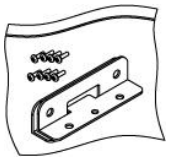
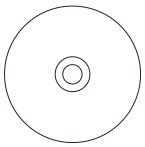
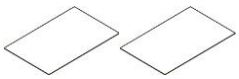
			
DVR	Remote Control & Batteries	Mouse	power cord
			
PoC adaptor (*)	Rack Bracket & Screws	SW & user guide CD	Installation and user guide Quick installation guide

HDC1601M / HDC801F-PD / HDC801F / HDC801H

			
DVR	Remote Control & Batteries	Mouse	power cord
			
PoC adaptor (*)	Rack Bracket & Screws	SW & user guide CD	Installation and user guide Quick installation guide

* Only available in PoC models

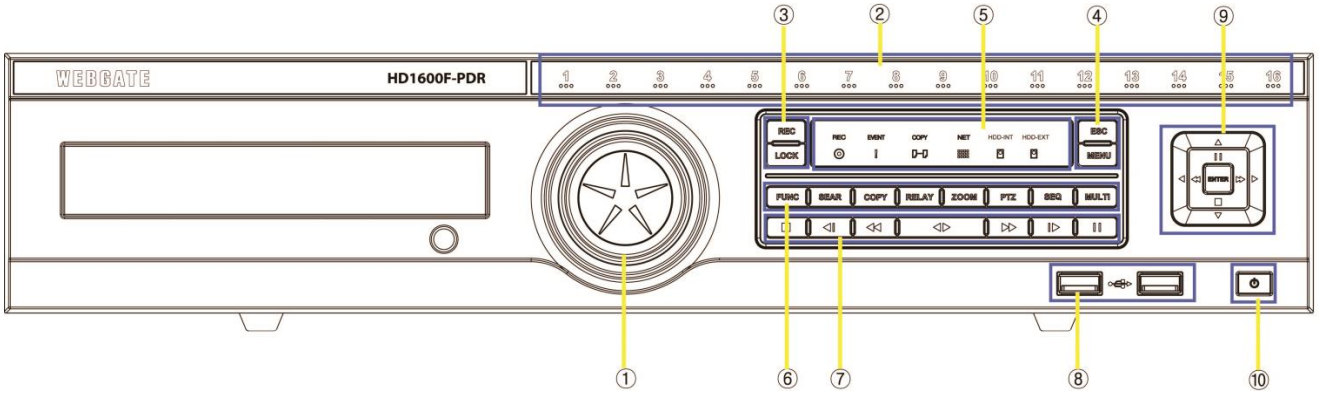
HDC400F-PD / HDC400F

			
DVR	Remote Control & Batteries	Mouse	adaptor & power cord
			
Rack Bracket & Screws	SW & user guide CD	Installation and user guide Quick installation guide	

Product Description

HD1600F-PDR / HD1600F-R / HD1600F / HD1600M-PDR
HD800F-PDR / HD800F-R / HD400F-PDR

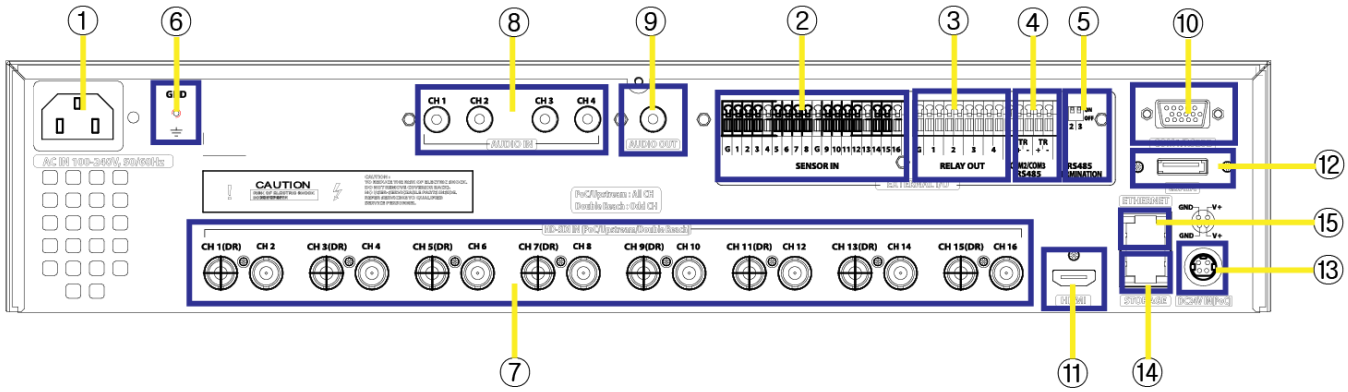
Front view



part name		function description
1	Jog shuttle	Use to control fast forward/rewind FPS rate.
2	touch channel button	Touch to select channels from live-streams and playback list.
	channel LED	Shows input status of a stream and event movement status.
3	REC	Starts and pauses the manual recording
	LOCK	Locks screen control button on monitoring mode to prevent from use
4	ESC	Exits current menu or cancels the selected
	MENU	Enters the Main Menu where every setting of the DVR is possible
5	Record indicator	Shows the recording status when the DVR is recording
	Event indicator	Will be turned if event happens.
	Copy indicator	Turns off when copy begins to show the copy progress
	Network indicator	Turns off when network is connected to shows the network connection status
	Built-in HDD indicator	Turns off while built-in HDD records
	external HDD indicator	Turns off while recording about eSATA HDD is in process
6	FUNC button	runs func menu on which users can access to main menu, multi monitor screens, auto screen sequence, auto screen switch, copy, search, playback, keylock, log out and power
	SEAR button	Runs a menu with time/calendar/event search function.
	COPY button	Runs a menu with AVI, EXE file copy function via USB stick
	RELAY button	Manually sets Relay On/Off
	ZOOM button	Enters digital zoom mode where 16 times magnification under live/playback single screen and movement on magnified picture are possible.
	SEQ button	Runs auto screen sequence mode for multi/single screens under live mode up to 16 channels.
	MULTI button	Changes multi-screen mode under live & playback mode.
7	■(STOP)	Stops the playback and exits to the live mode
	◀I(SREW)	Playback Rewind at 1Frame
	◀◀(REW)	Changes the speed of rewind playback
	◀▶(PLAY)	Begins the playback
	▶▶(FWD)	Changes the speed of fast forward playback
	I▶(SFWD)	Playback fast forward at 1Frame
	II(PAUSE)	Temporarily pauses the playback
8	USB port	USB port for flash memory or mouse.
9	◀(move to left)	Move to left on menu
	▶(move to right)	Move to right on menu
	▲(move up)	increases values on menu
	▼(move down)	decreases values on menu
	Enter(select)	Move to submenu on menu or select an item
10	Power	turns ON/OFF the power

HD1600F-PDR HD1600M-PDR / HD800F-PDR / HD400F-PDR *

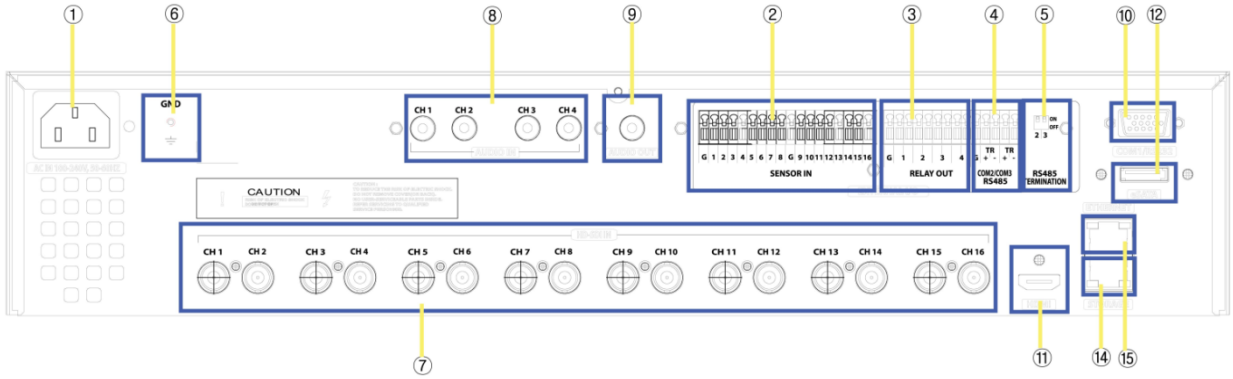
Rear view



No	input/output terminal name	function
1	Power In	AC100V~AC240V power cord socket.
2	Sensor IN	External sensor input terminal
3	Relay	Relay connect terminal
4	COM2,3	Connct RS-485
5	RS-485 terminating resisters	Set terminating resisters when using RS-485 method
6	Ground connection	Connection terminals that connects DVR to an outside device
7	Channel input	Input connection terminal for BNC of a HD-SDI camera
8	Audio input	Audio input connect terminal.
9	Audio output	Speaker output terminal.
10	COM1	RS-232C D-SUB.
11	HDMI Output	Output port on which HDMI monitor can be connected
12	eSATA port	eSATA external HDD is connected
13	DC 24V PoC	PoC adaptor is connected
14	Storage	Exclusive network storage device(NS04R) is connected and used
15	ethernet	network connecting terminal (RJ-45)

HD1600F-R / HD1600F / HD800F-R *

Rear view



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14	Storage	Exclusive network storage device(NS04R) is connected and used
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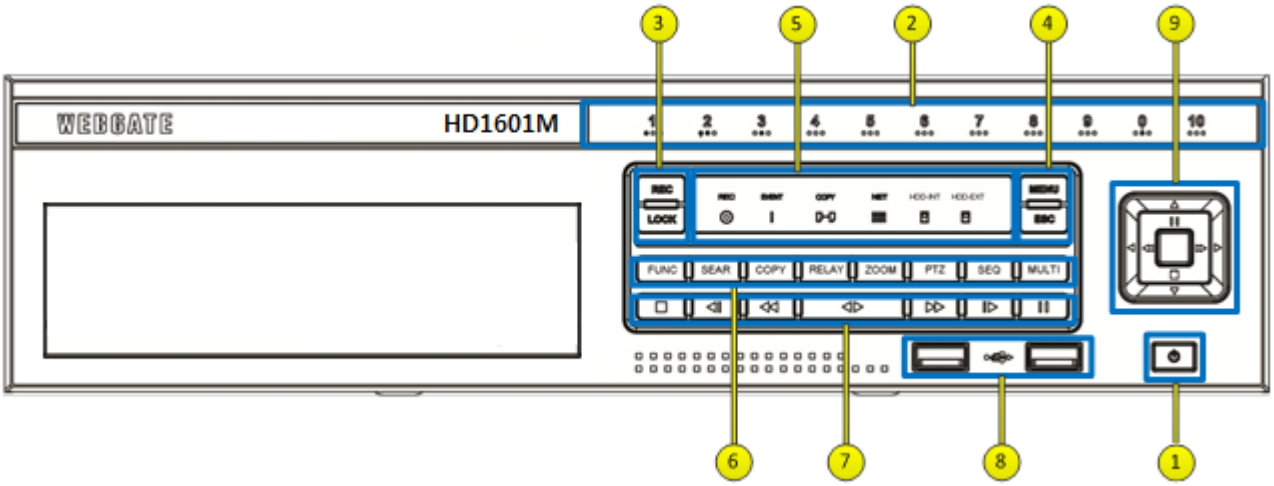
* Varies between different models

HDC1601M / HDC801F-PD / HDC801F / HDC801H *

Front view

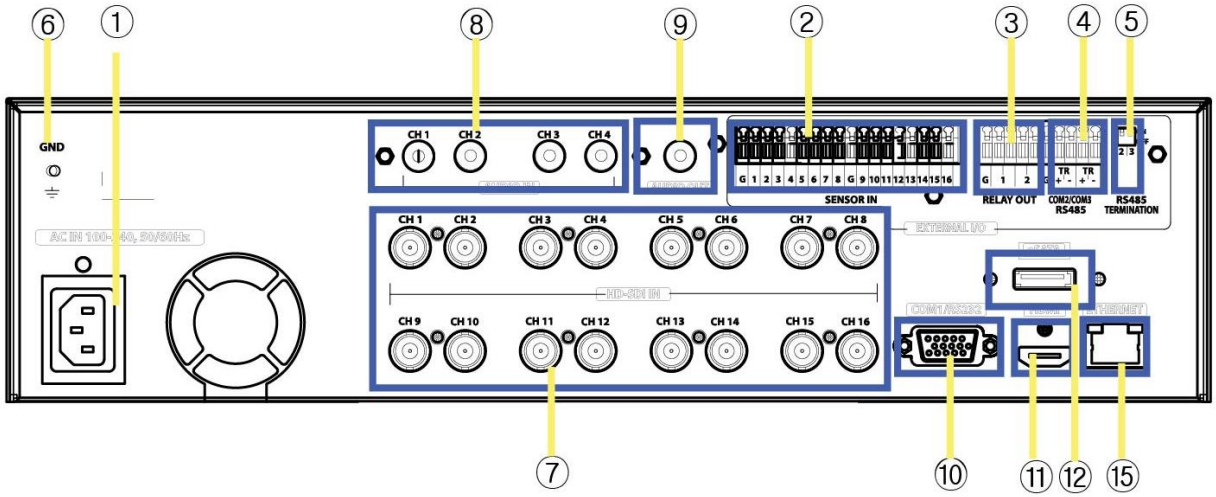


	Category	Function
1	Power	To turn On/Off power
2	Touch channel button	Select channel by touch during live and playback.
	Channel LED	Shows image input status and event working status.
3	REC	To start and stop Manual record
	LOCK	To lock the buttons on the front panel/remote controller in monitoring status
4	ESC	Exits current menu or cancels the selected
	MENU	To enter Menu
5	Record LED	Display recording status
	Event LED	Display event status when event is triggered.
	Copy LED	Display copy status once copy is under process by flickering
	Network LED	Display network connection status by flickering
	Internal HDD LED	It flickers while internal HDD is recording
	ExternalHDD LED	It flickers while eSATA HDD is recording
6	FUNC button	Runs FUNC menu where user can use main menu, screen division, auto sequence, copy, search, playback, keylock, logout, poweroff
	SEAR button	Runs menu for search by time, calendar, event, thumbnail
	COPY button	Runs menu for copy AVI, EXE thru DDVD, USB
	RELAY button	Runs Relay On/Off manually
	ZOOM button	Max 16 times zoon in live/playback screen and get into digital zoom mode
	SEQ button	Runs Max 16 scenario of auto sequence in live mode
	MULTI button	Changes division mode in live and playback mode
7	■(STOP)	Stop playback
	◀I(SREW)	To move to reverse direction by one frame
	◀◀(REW)	To move or select in menu and change replay speed to reverse direction in playback mode.
	◀▶(PLAY)	To select playback mode and change playback direction.
	▶▶(FWD)	To move or select in menu and change replay speed to forward direction in playback mode.
	I▶(SFWD)	To move to forward direction by one frame
	II(PAUSE)	Pause playback
8	USB port	USB Memory, USB connection port
9	◀(Left move)	To move to left in menu
	▶(Right move)	To move to right in menu.
	▲(Upper move)	To move to upper in menu
	▼(Down move)	To move to lower in menu.
	Enter(select)	To select menu or enter the selected menu

* Varies between different models

HDC1601M

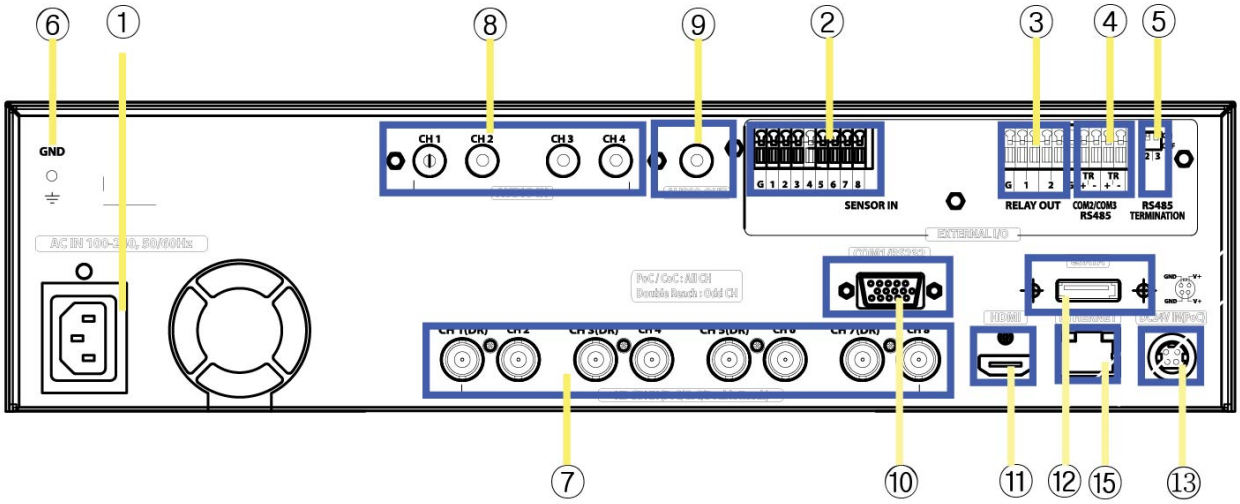
Rear view



No	input/output terminal name	function
1	Power In	AC100V~AC240V power cord socket.
2	Sensor IN	External sensor input terminal
3	Relay	Relay connect terminal
4	COM2,3	Connct RS-485
5	RS-485 terminating resisters	Set terminating resisters when using RS-485 method
6	Ground connection	Connection terminals that connects DVR to an outside device
7	Channel input	Input connection terminal for BNC of a HD-SDI camera
8	Audio input	Audio input connect terminal.
9	Audio output	Speaker output terminal.
10	COM1	RS-232C D-SUB.
11	HDMI Output	Output port on which HDMI monitor can be connected
12	eSATA port	eSATA external HDD is connected
13	N/A	
14	N/A	
15	ethernet	network connecting terminal (RJ-45)

HDC801F-PD

Rear view

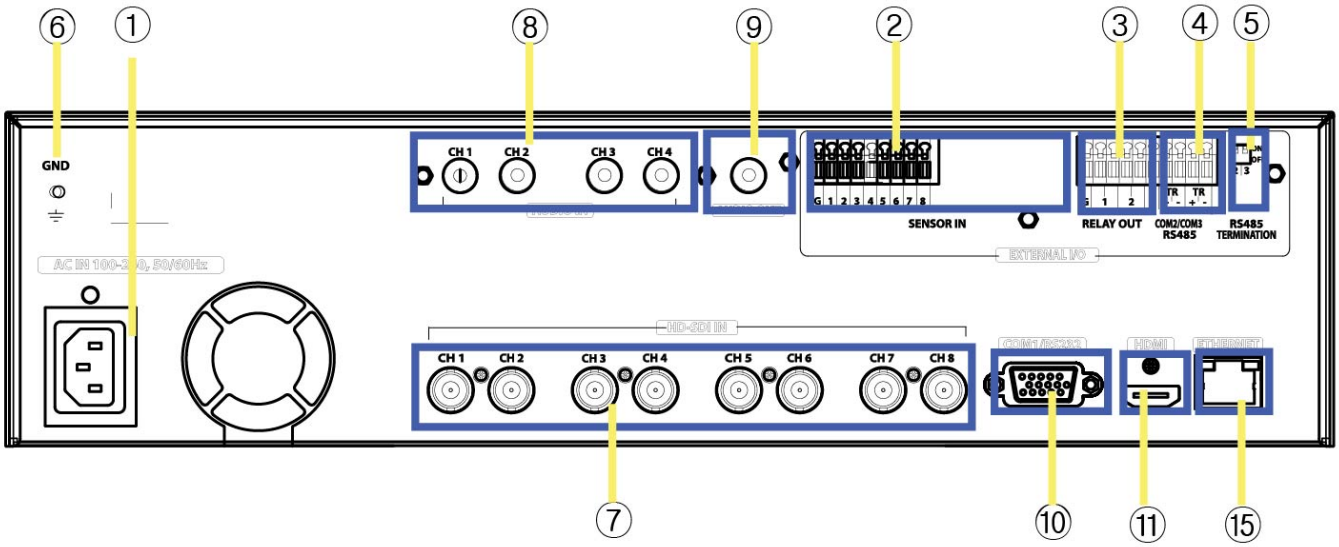


No	input/output terminal name	function
1	Power In	AC100V~AC240V power cord socket.
2	Sensor IN	External sensor input terminal

No	input/output terminal name	function
3	Relay	Relay connect terminal
4	COM2,3	Connct RS-485
5	RS-485 terminating resisters	Set terminating resisters when using RS-485 method
6	Ground connection	Connection terminals that connects DVR to an outside device
7	Channel input	Input connection terminal for BNC of a HD-SDI camera
8	Audio input	Audio input connect terminal.
9	Audio output	Speaker output terminal.
10	COM1	RS-232C D-SUB.
11	HDMI Output	Output port on which HDMI monitor can be connected
12	eSATA port	eSATA external HDD is connected
13	DC 24V PoC	PoC adaptor is connected
14	N/A	
15	ethernet	network connecting terminal (RJ-45)

HDC801F / HDC801H *

Rear view

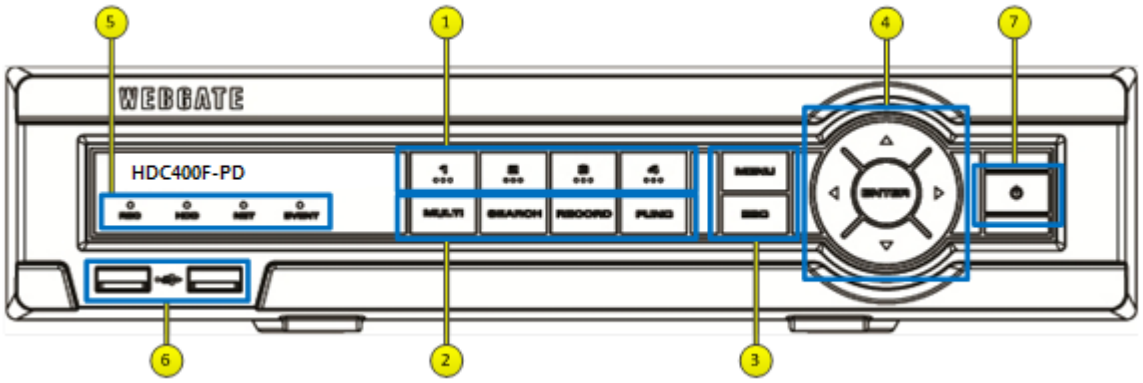


No	input/output terminal name	function
1	Power In	AC100V~AC240V power cord socket.
2	Sensor IN	External sensor input terminal
3	Relay	Relay connect terminal
4	COM2,3	Connct RS-485
5	RS-485 terminating resisters	Set terminating resisters when using RS-485 method
6	Ground connection	Connection terminals that connects DVR to an outside device
7	Channel input	Input connection terminal for BNC of a HD-SDI camera
8	Audio input	Audio input connect terminal.
9	Audio output	Speaker output terminal.
10	COM1	RS-232C D-SUB.
11	HDMI Output	Output port on which HDMI monitor can be connected
12	N/A	
13	N/A	
14	N/A	
15	ethernet	network connecting terminal (RJ-45)

* Varies between different models

HDC400F-PD / HDC400F

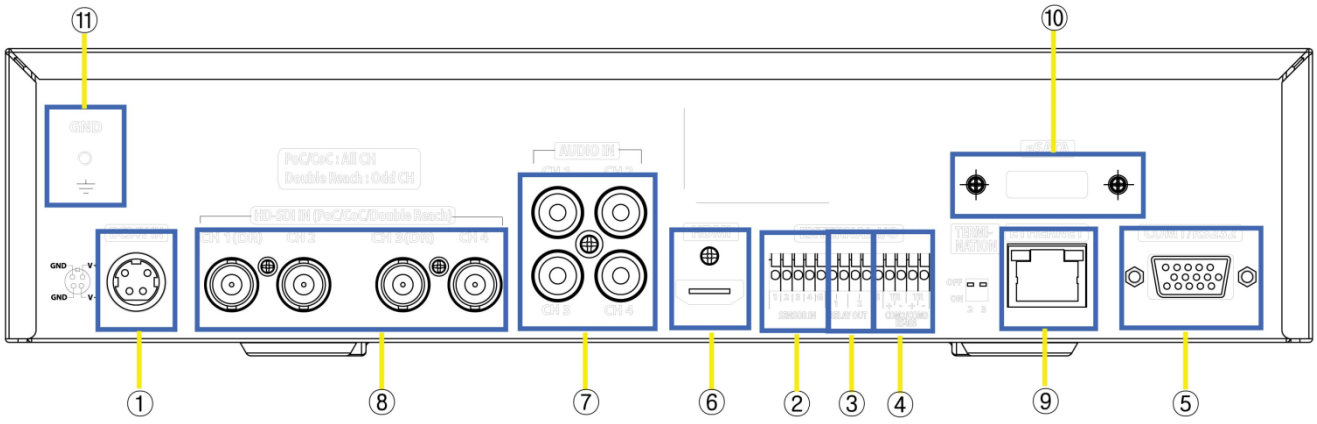
Front view



Category		Function
1	Touch channel button	Select channel by touch during live monitoring and playback.
	Channel LED	Shows video input status and event working status.
2	MULTI button	Changes split screen mode during live monitoring and playback
	SEAR button	Open Search menu that supports Time, Calendar, Event, Thumbnail search
	REC button	It starts and stops Manual recording
	FUNC button	Open FUNC menu that handles main menu, screen split, auto sequence, copy, search, playback, keyLock, logout, and power off
3	ESC	Exits current menu or cancels the selected
	MENU	Enters main menu
4	◀(Left move)	Moves to left item at menu (changes replay speed during reverse playback)
	▶(Right move)	Moves to right item at menu (changes replay speed during forward playback)
	▲(Up move)	Increase values at menu (pauses the playback)
	▼(Down move)	Decrease values at menu (stops playback and return to live monitoring)
	ENTER(Select)	Enter sub-menu (starts playback)
5	Record LED	Shows recording status by flickering
	HDD LED	Shows HDD working by flickering
	Network LED	Shows network connection status by flickering
	Event LED	It turns on if an event is triggered
6	USB port	USB port for flash memory or mouse
7	Power	Turns On and Off DVR power

HDC400F-PD

Rear view

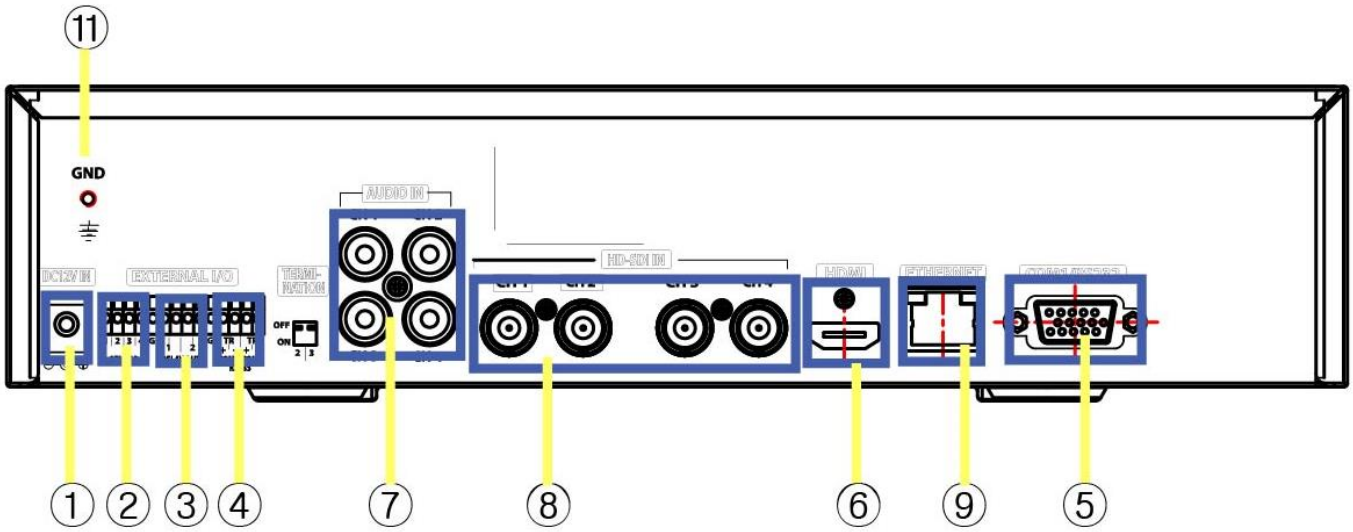


No	In/Out port name	Function
1	Power input	Connector for power input
2	Sensor IN	Input for external sensor.

No	In/Out port name	Function
3	Relay	Relay Connection terminal.
4	COM2	RS-485 device connection
5	COM1	D-SUB connector for RS-232C
6	HDMI	Video output HDMI connector for monitor
7	AUDIO IN	RCA connection for Audio input
8	HD-SDI IN	BNC connectors for camera input
9	ETHERNET	RJ45 connector for network
10	eSATA	eSATA connector for external storage
11	GND	Ground between DVR & external device.

HDC400F

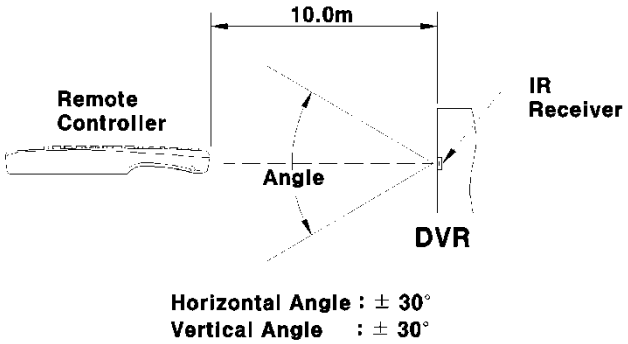
Rear view

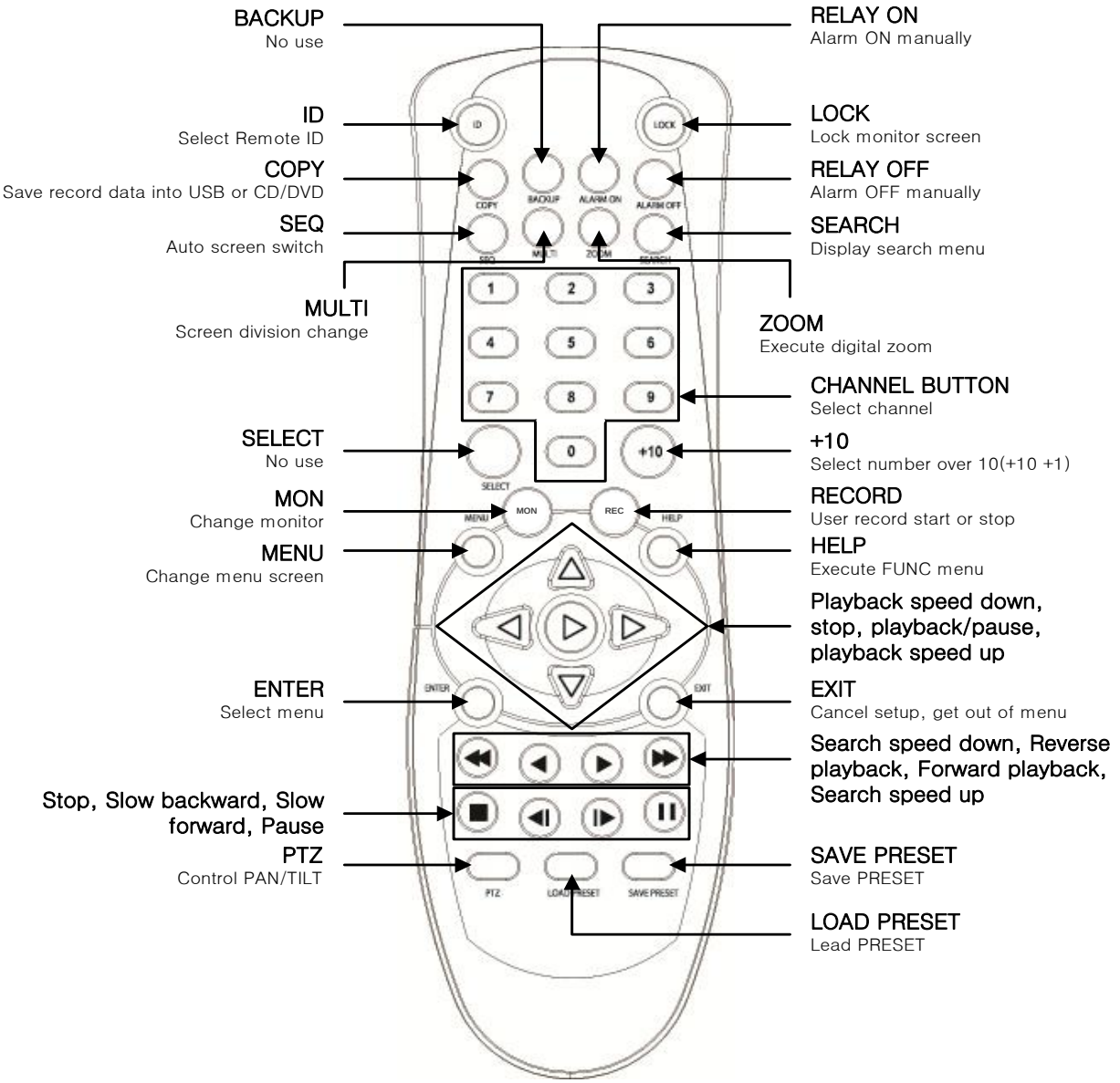


No	In/Out port name	Function
1	Power input	Connector for power input
2	Sensor IN	Input for external sensor.
3	Relay	Relay Connection terminal.
4	COM2	RS-485 device connection
5	COM1	D-SUB connector for RS-232C
6	HDMI	Video output HDMI connector for monitor
7	AUDIO IN	RCA connection for Audio input
8	HD-SDI IN	BNC connectors for camera input
9	ETHERNET	RJ45 connector for network
10	N/A	
11	GND	Ground between DVR & external device.

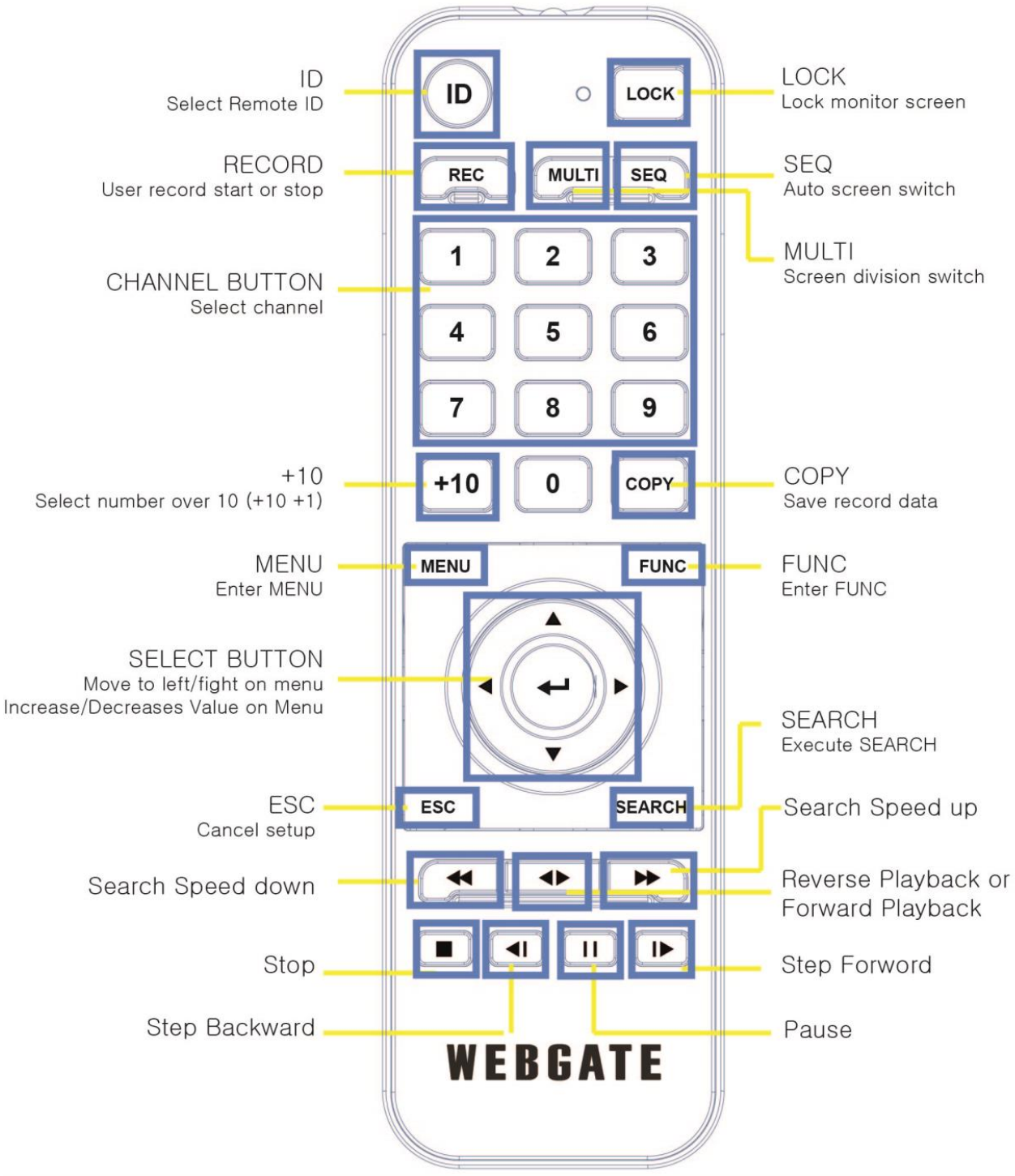
Remote control

Can use every function of the DVR and control several DVRs with only one remote control. To be able to use the remote control, please create a user ID on the remote control ID section of system settings. (See the right picture for working angle of a remote control)





Remote control A



Remote control B

Installation

Check settings

This DVR is high quality security device with a high capacity built-in HDD and important curcuits. Before installation, please read carefully below recommendations as high internal temperature of the product can lead to damages and shorten product life cycle.

Recommendations on installing a DVR in a rack.

1. Don't seal the inside of rack where DVR is installed.
2. Keep airflow through inlet and outlet.
3. If there is another device installed in the rack, secure additional space or install air ventilation.
4. Installation of an air circulation fan around each inlet and outlet is strongly recommended.
   (Install filter around inlet or outlet for harmful substances)
5. Keep ambient temperature between 5°C~45°C around DVR.

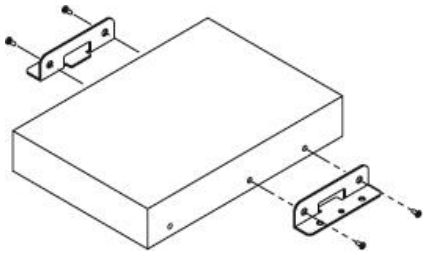
Warnings if HDD is installed

1. Please be extra careful not to damage HDD as it easily breaks.
2. During installation, make sure insulated coat doesn't come off or isn't placed in the worng place.
3. Don't lose screws and parts.
   (If screws an parts are not screwed or assembled correctly, product may not operate)
4. Check HDD compatibility list HDD
   (Please check with CS team)
5. Partition table must be removed for HDDs used in PC or other DVR models before installation.

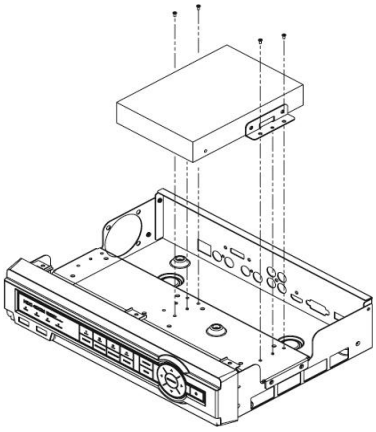
HDD installation *

HDC400F-PD / HDC400F

1. Tighten the both side of HDD bracket using screws.



2. Install HDD bracket with HDD into DVR then hold it with screw to fix it to the bottom part of DVR.



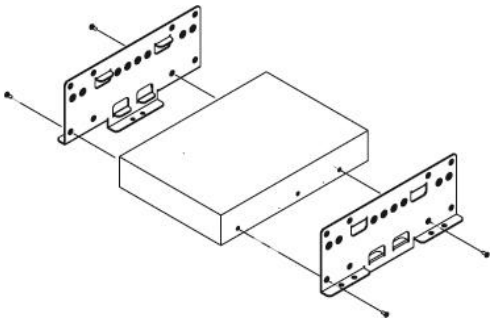
<Note>
Socket arrangement of SATA cable in main b'd is as follows.
One HDDs can be installed in DVR.

Main b'd socket	Disk manager
INT E	INT E
eSATA	eSATA

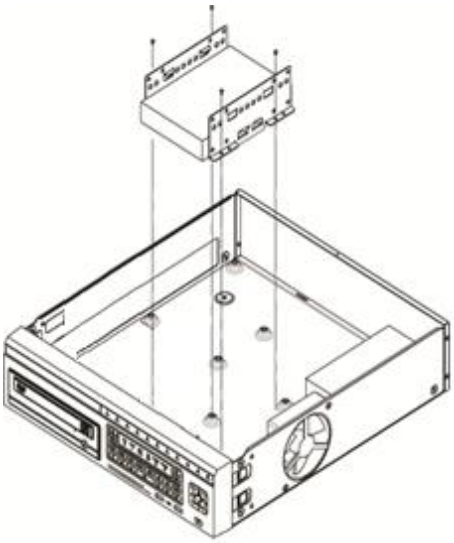
* Varies between different models

HDC1601M / HDC801F-PD / HDC801F / HDC801H

1. Tighten the both side of HDD bracket using screws.



2. Install HDD bracket with HDD into DVR then hold it with screw to fix it to the bottom part of DVR.

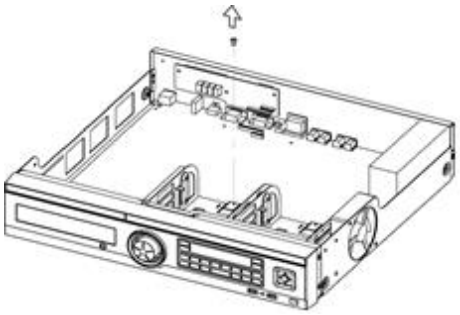


<Note>
Socket arrangement of SATA cable in main b'd is as follows.
Two HDDs can be installed in DVR.

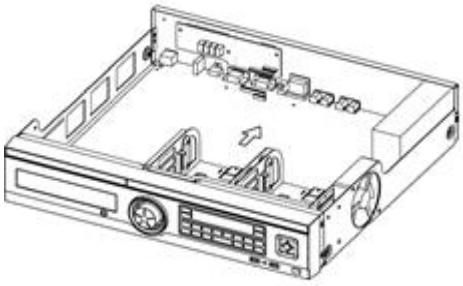
Main b'd socket	Disk manager
INT A	INT A
INT B	INT B
eSATA	eSATA

HD1600F-PDR / HD1600F-R / HD1600M-PDR / HD1600F
HD800F-PDR / HD800F-R / HD400F-PDR

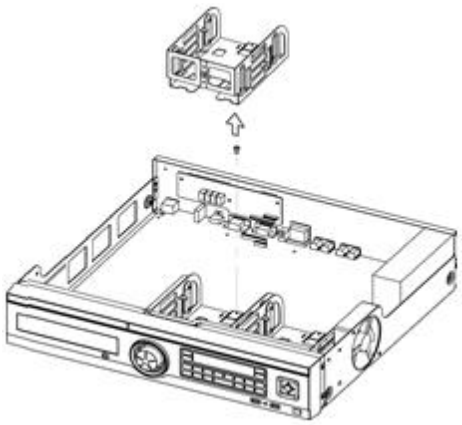
1. Unscrew bracket screws that are fixing it to a DVR..



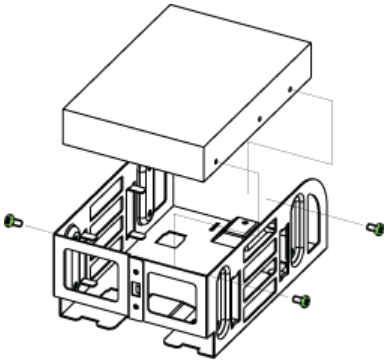
2. Push HDD bracket to a direction shown in the right picture and separate from fixtures.



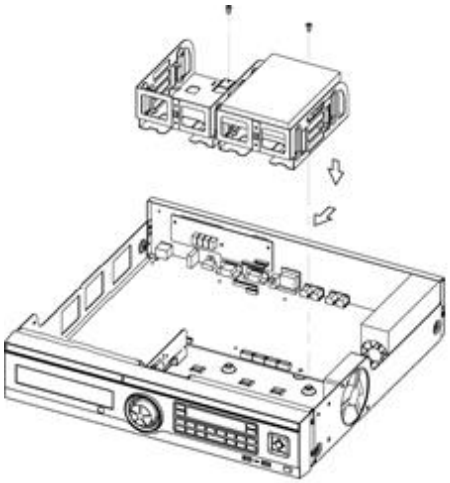
3. Lift HDD bracket to a direction shown in the right picture and separate from the bottom.



4.Place HDD in a HDD bracket and fasten 4 screws on each side.



5. Place HDD bracket fastened with screws in DVR and fasten it on the bottom with screws.



<Note>
Below is SATA cable socket sequence of a mainbaord.
Up to 5 HDDs can be installed inside DVR.

Main Board	Disk Manager
INT A	INT A
INT B	INT B
INT C	INT C
INT D	INT D
INT E	INT E
eSATA	eSATA

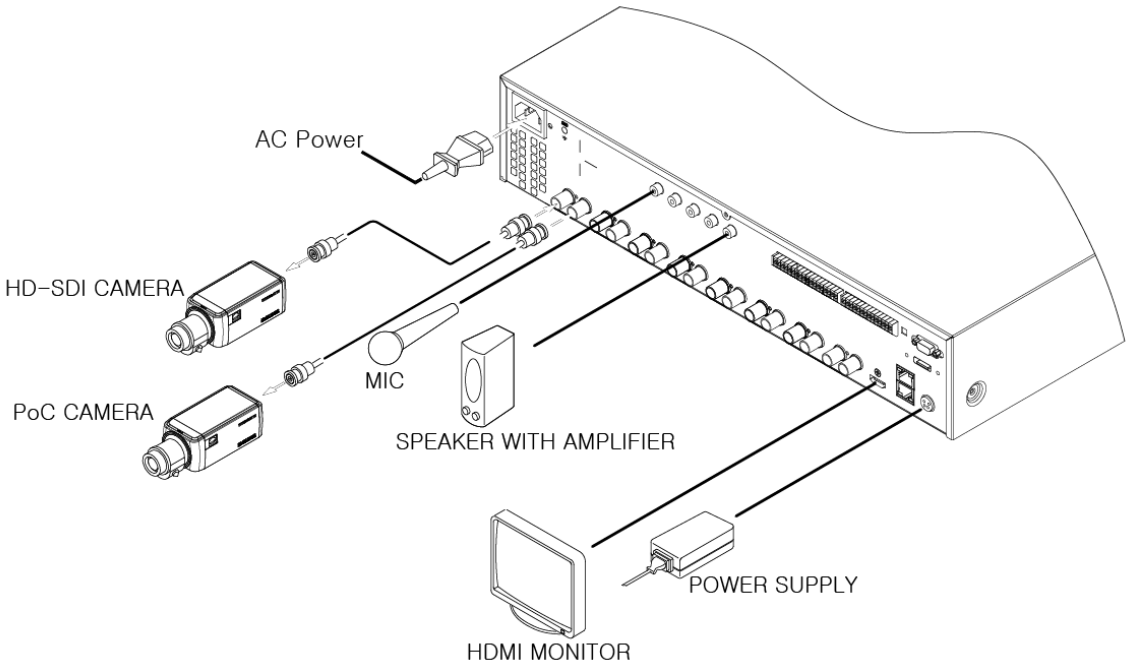
Adding HDD

Remove the power cord before installation to protect DVR against possible damage and an electric shock
Please call the store you purchased the product from if it isn't operating correctly due to installation or configuration mistakes.

- ✓ **Warnings regarding Data loss**
  Please handle with care so HDD data isn't damaged.
  Check HDD compatibility before installing additional HDD.
  Be careful not to give any shock on HDD during operation which could lead to possible damage or malfunction .
- ✓ **Cases when HDD and its data can be damaged.**
  To minimize the data loss, please copy data as often as you can.
  Physical shock during disassembly or installation may lead to Data damage.
  Sudden power outage or turn off of DVR can damage HDD.
  Please don't try to move or shock DVR while HDD is working.

Connecting other devices

Basic connections



Connecting a monitor

Check monitor resolution and connect to DVR.

✓ HDMI Port : 1920 x 1080p

<Note>

Only connect cameras that support HD-SDI standard.

We strongly recommend using HDMI certified cable when connecting to DVR.

Connecting a Camera

Use recommened coaxial cable to connect HD-SDI camera to DVR as shown in the picture.

Only cameras with 1080p resolution can be used. Other resolutions are not supported and channels with resoultions Webgate camera doesn't support will not be recorded.

PoC camera

Connect PoC camera & PoC adapter to DVR to supply power to PoC camera through coaxial cable and no additional power supplies are required. And PoC camera can be controlled using the DVR CoC function through coaxial cable without additional RS-485 cable.

Recommended cable *

Cable Type	HD-SDI transmission distance	Use
5C2V	about 90M	Analog signal
4C-FB(T), 4C-HFB(T), RG59	about 140M	High-foamed cable, double or triple shielded cables are recommended
5C-FB(T), 5C-HFB, L-6CHD, RG6	about 180M	HD-SDI cable
5C-HFBT	about 200M	HD-SDI cable

* Depends on manufacturer and models.

<warnings>

✓ Transmission distance will be affected by cable types and installation site environment

- ✓ Transmission distance of the chosen cable will be various based on reduction rate of 750MHz (reduction rate of dB/100m < 25dB is recommended)
- ✓ Foamed or high-foamed trishield cable is recommended.
- ✓ Impedance 75Ω must be used for coax cable connection and connector work.
- ✓ Beware of deformation of cable due to high pressure over the cable.
- ✓ Don't pull the cable with too much force.
- ✓ For DVR input/output, cables will be tied at the rear of the rack. If tied too tightly, inside/outside insulator can be deformed so tie it loosely within cable's curvature range.

Connecting a power cord

When power cord is connected, DVR starts booting automatically.
How to turn off DVR while it is operating : press power switch for 5 seconds, and a pop-up window will appear, then select "YES" to turn off the power. For turn back on the power again, push the Power button.

Connecting an audio

Please see the below picture and use RCA cable to connect audio input/output devices to DVR

Connecting external device

Connecting USB Device

USB port can be used for copy of recorded data and for mouse.
See below table for USB Device specifications.

USB specifications	Ver 2.0 or later
Usable device	USB Stick
Voltage specifications	DC 5V / Max. 200mA

<Note>
USB stick needs to be FAT32 formatted.
DVR may not recognize USB Flash memories that require additional program on MS Windows.

Connecting eSATA Device

If external eSATA storage is used, it can be connected to a rear eSATA port. Additional power for eSATA device will be required as DVR doesn't supply power.

.

<Note>

1. Check compatibility of eSATA with DVR as not all eSATA are compatible with DVR.
2. If eSATA is connected to DVR when it is on, it may not be recognized depending on external devices. So we recommend following the below steps.
   1) Turn off DVR.
   2) Turn off eSATA then connect it to DVR.
   3) Turn on eSATA.
   4) Turn on DVR.

Connecting NS04R

Connecting to DVR

(1) Connect NS04R to DVR using Gigabit Ethernet cable.
(2) NS04R's DVR Port and DVR's Storage Port must be connected directly.

* For more information and setup of NS04R, please refer to "NS04R user manual".

<Note>

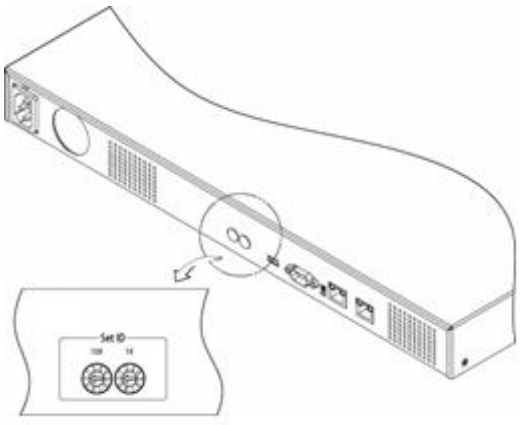
1) Use Gigabit Ethernet Cable(Category-6) for Network cables to connect to DVR. Other cables are not compatible with Webgate DVR.
2) NS04R and DVR must be connected by cables and normal operation isn't guaranteed if Hub is used.

Set ID configuration

Set ID using Rotary switch located at rear panel.
Set each different ID in case of over 2 NS04Rs are connected.

Using tool such as Driver to set ID. For Group ID swich, it is set as ID in a unit of 10 when ID switch of NS04R is in a unit of 1.
ID setup value must be within 0~99.

EX) ID will be 23 when switch is set as Group ID=2, NS04R ID=3



<Note>

1) It approximately takes a minute to turn on the power and to connect NS04R to DVR.
While it is connecting, 4 LEDs on the front will be turned on in order and all 4 LEDs may be turned on or off when it is connected to DVR. HDD list can be checked on the disk manager.

Connecting input/out terminals

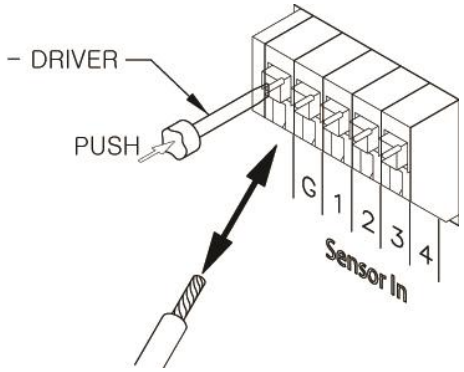
Wire end handling

See below for wire end handling used in terminal block. Please work on single line and multiple line as they have different thicknesses.

- Multiple lines : Peel off the recommended length(8~10mm) and lead-coat it. Use AWG 22 ~ 26.
- Single line : Peel off the recommended length(8~10mm) and use AWG 20 ~ 26.

Wire insertion/removal

As shown in the picture, push the lever to insert or remove a wire.



Connecting the sensor

specification

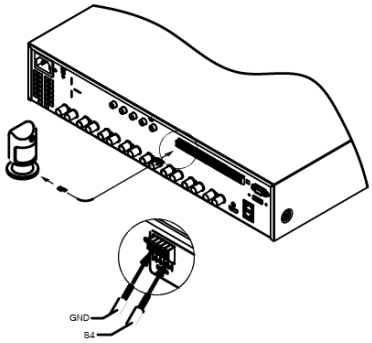
below requirements need to be met in order to connect the sensor

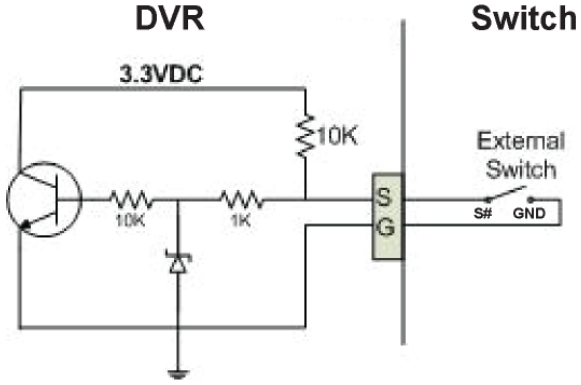
Specifications	Input Channel #	16EA Transistor input
	Input Type	N.C, N.O support
	Supported sensor	Dry contact sensor

	Connection method	Connect the trimmed wire to terminal block
Performance	Available input pulse range	Minimum 500ms
	Output current	Standard DC 12mA

Connecting sensor input terminal

Please see the picture for sensor input. The below picture is an example of connecting Dry Contact sensor type. Please refer to "Wire Handling" for more information.





Connecting relay

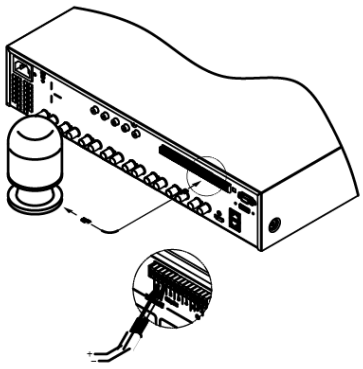
specifications

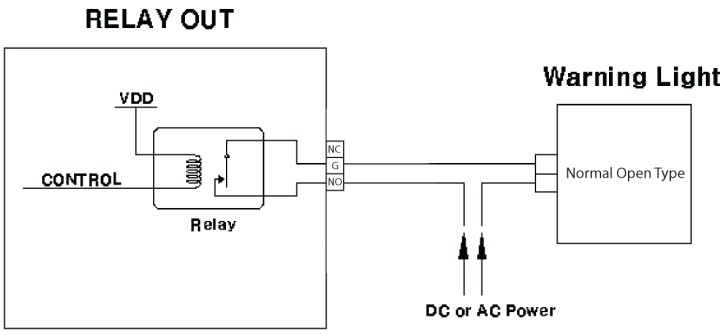
Please see the below table for alarm output requirements.

Specifications	Output Ch.	4ch relay output
	Output type	Dry Contact
	Connection method	Connect the trimmed wire to terminal block
Performance	DC	30V / 1A
	AC	125V / 0.5A

Connecting relay

Please refer to the below picture in regards to connecting R1~R4 output. Below picture is an example of connecting a light bar. Please see "wire end handling" in regards to connecting/removing wires.

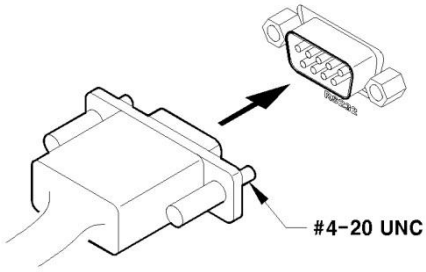


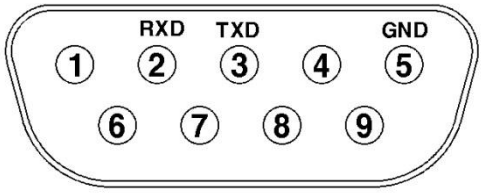


Connecting COM1 serial port with external devices

Connecting Text input device (ATM / POS / Access Control)

Using COM1/RS232, TEXT DATA can be recorded with synchronizing POS/ATM.



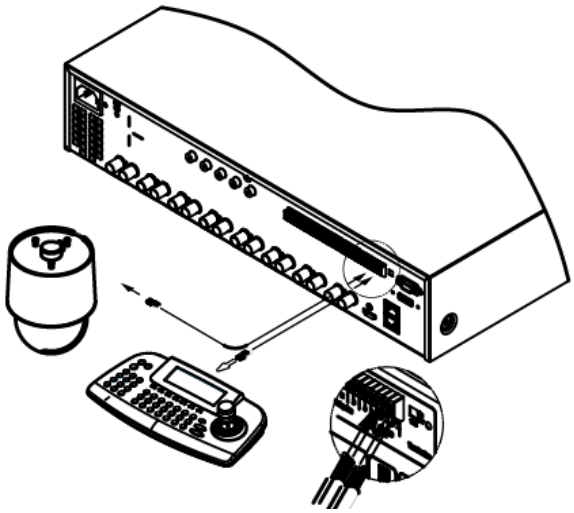


As shown in the picture, for a set up to connect COM1/RS232 (D-Sub 9pin), set up serial & text info under "device" menu.

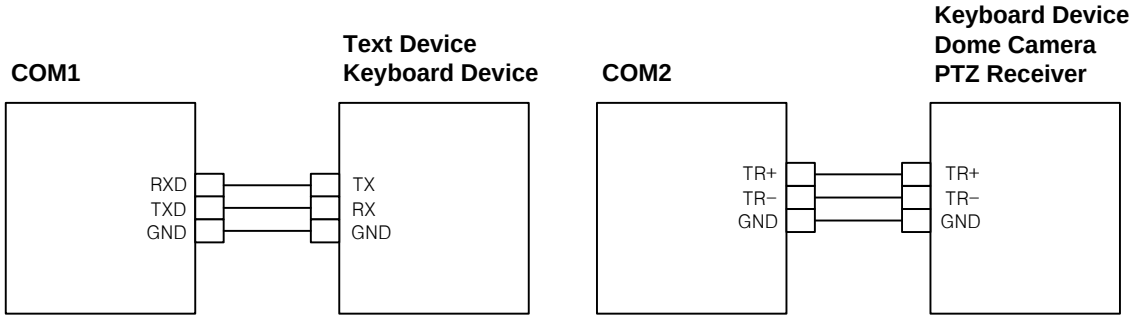
Connecting COM2/COM3 serial port external device

Connecting serial communication terminal for PTZ device & Keyboard device

Control PTZ devices and Keyboard devices by connecting them to DVR's COM ports. Picture in the right shows how a camera and a keyboard device with PTZ function are connected to RS-232 COM1 & RS-485 COM2 respectively. Other serial communication terminals will be connected to other devices as shown in the below picture.
To connect or remove a wire, please refer to the "wire end handling" and supported models can be checked on "compatible PTZ & Keyboard device" on the supplement booklet.



Connecting Serial Port for Transparent device



Connecting PTZ & Keybaord

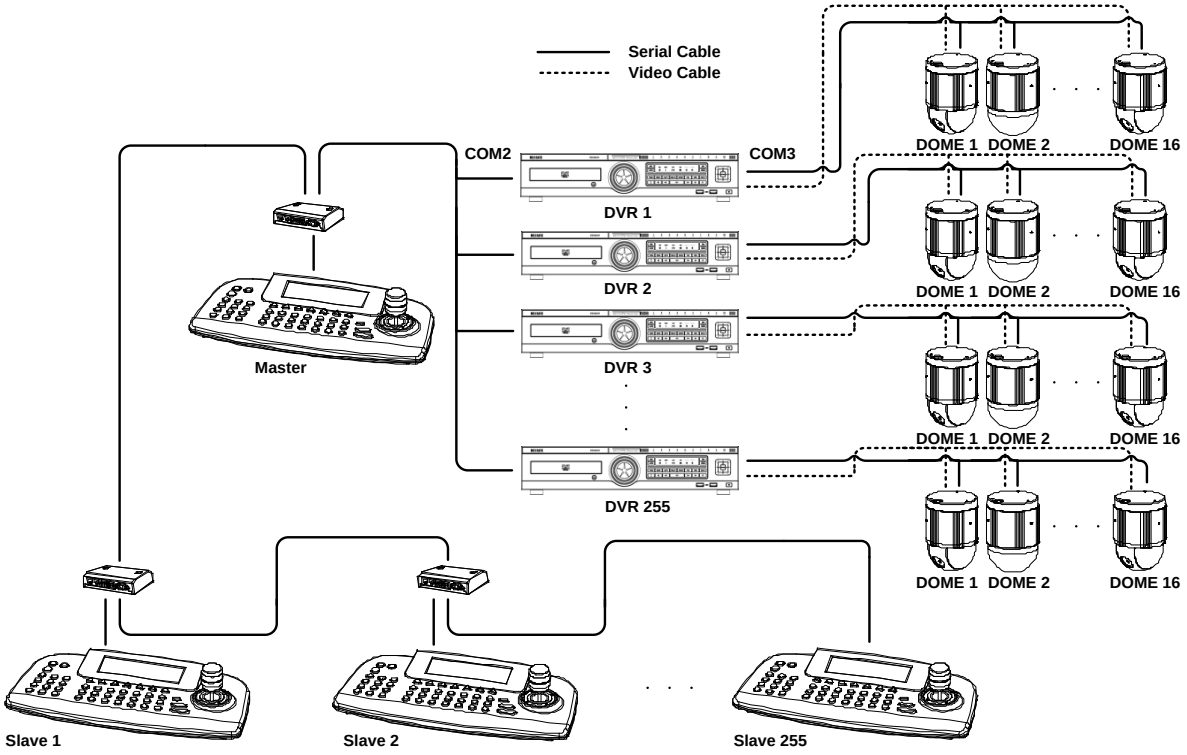
up to 255 DVRs can be connected using keyboard and PTZ control is possible for all channels connected to DVR. Also, multiple keyboards extension as Slave can be used limitless with Master Keyboard. In ths case, Master Keyboard has priority for all controls. Please refer the instruction manual for PTZ keyboard connection & its way of control which comes with PTZ/ Keyboard.

Configuration using 2 serial ports

PTZ(DOME) and Keyboard can be connected to DVR's 2 serial ports. In such case, keyboard can control DVR and PTZ(DOME) at the same time, and DVR can control PTZ(DOME.

The below diagram represents configuration of multi DVRs with PTZ(DOME). To control PTZ(DOME) using keyboard, please select DVR ID then select camera for control.

control device	connection device
Keyboard (Master/Slave)	All DVRs can be controlled, all PTZ(DOME) can be controlled
DVR	PTZ(DOME) directly connected to DVR can be controlled



Confituration using 1 serial ports

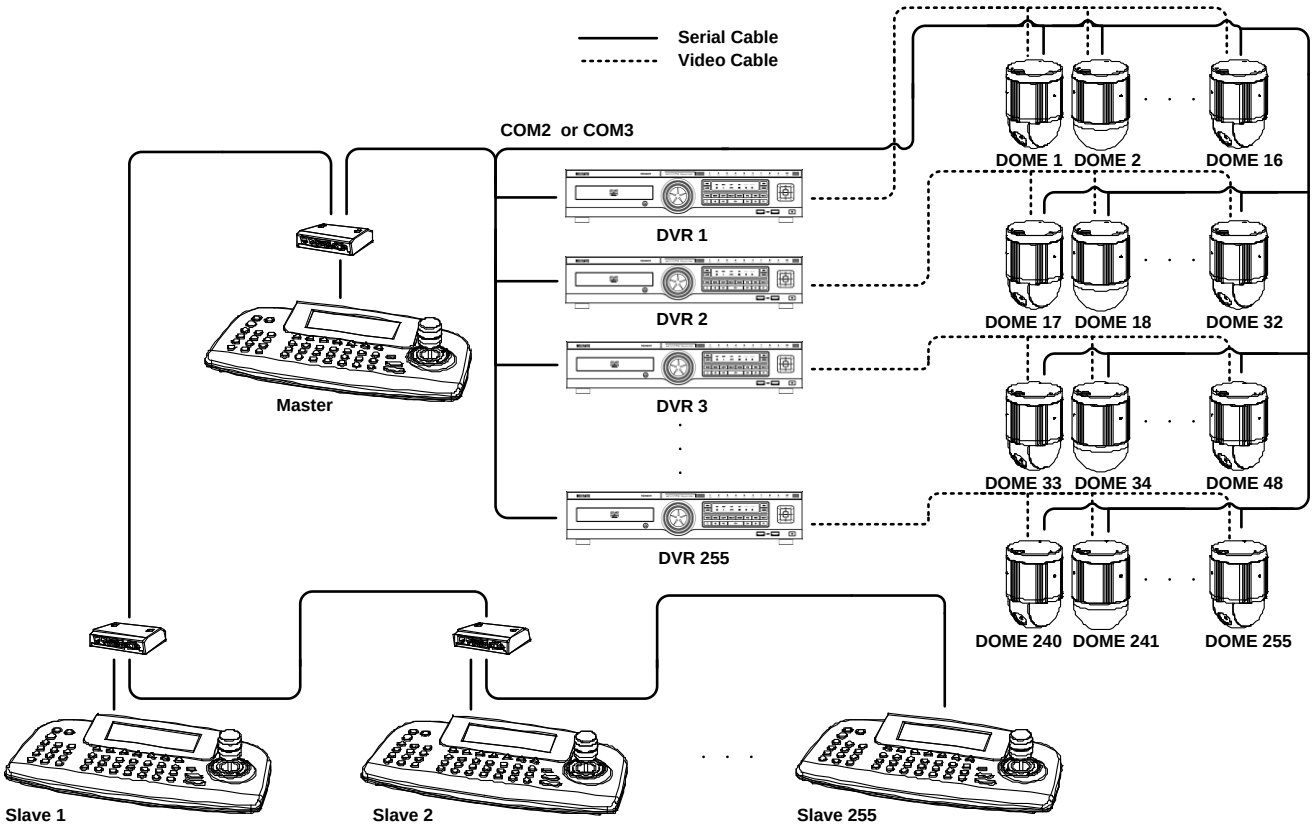
When using 1 serial port, user can connect both of PTZ(DOME) and Keyboard to a port, and user can select a PTZ(DOME) through the keyboard. According to DVR's COM port setting, connected controllable device can be selected, and by choosing a DVR ID, keyboard can control several DVRs.

In case PTZ(DOME) is setup on DVR COM port, user can use it as follows.

Control device	Connection device
Keyboard (Master/Slave)	All DVRs can't be controlled/ All PTZ(DOME) can be controlled
DVR	Only PTZ(DOME) directly connected to DVR can be controlled

In case Keyboard is setup on DVR COM port user can use it as follows

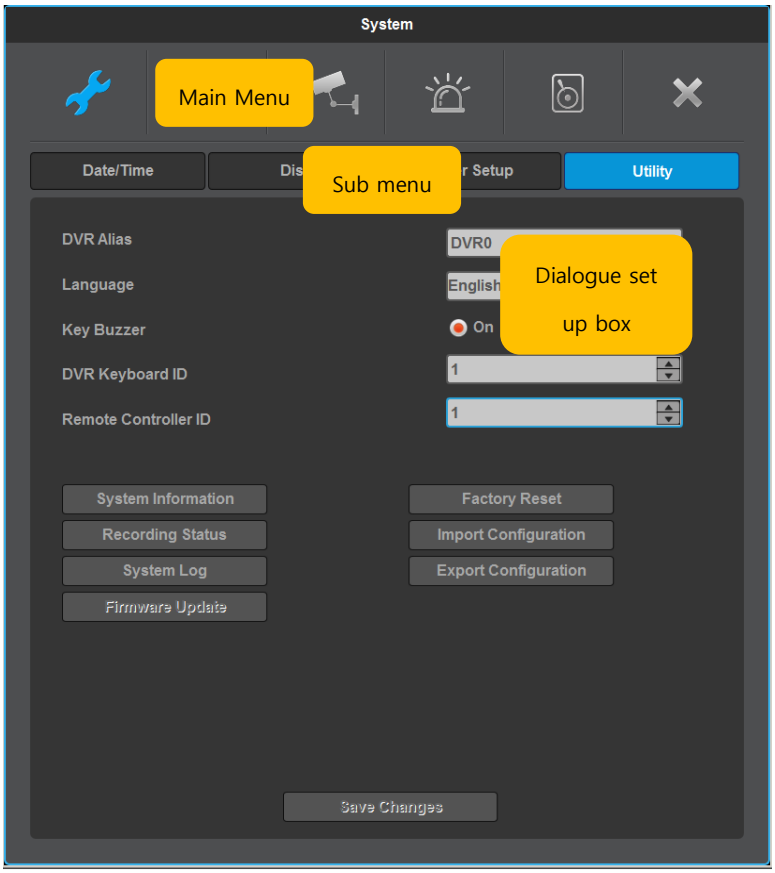
Control device	Connection device
Keyboard (Master/Slave)	All DVRs can be controlled, All PTZ(DOME) can be controlled
DVR	All PTZ(DOME) can't be controlled


Serial Cable
Video Cable
COM2 or COM3
DVR 1
DVR 2
DVR 3
DVR 255
Master
Slave 1
Slave 2
Slave 255
DOME 1
DOME 2
DOME 16
DOME 17
DOME 18
DOME 32
DOME 33
DOME 34
DOME 48
DOME 240
DOME 241
DOME 255

Usage

Menu Structure

Press [MENU] key on front panel or click [Main Menu] button under FUNC menu to enter the setup menu. To exit menu, press "X".



Main menu

The selected tab is shown in bright color and the sub-menu box will show the chosen To move to the previous/next tab, use the [◀/▶] arrow buttons. To move to a chosen sub-menu press the [Enter] key or click on the menu you want to view if you're using a mouse.

Sub-me

Selected sub-menu will disply the chosen item and the related setting will be shown. To move to the previous/next tab, use the [◀/▶▲/▼] arrow buttons. To move to the related setting press [Enter] or click the mouse. To move to the upper main menu, click the [Save Changes] at the bottom of menu, or press [ESC] button.

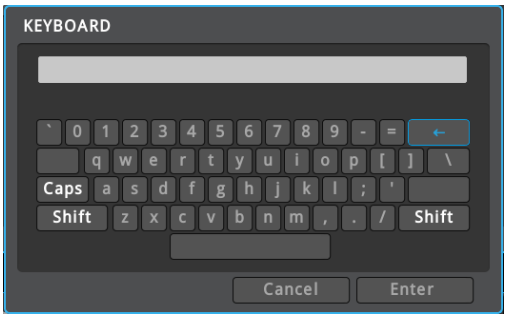
Set-up dialogue box

The selected tab is shown as orange, and To move to the previous/next tab, use the [◀/▶] or or click the mouse. To modify the configuration values, click the mouse or use the [◀/▶]

Dialogue box for string input

Dialogue box for string input is shown as follows. User can enter words or numbers using a mouse or direction buttons.

Use [▲/▼], [◀/▶] to move to select a letter and press [Enter] or click a mouse to enter it. To delete the entered letter, press [←] button, and to enter a space, press [SPACE] button. To exit the dialogue, press [ENTER] button to save string and exit or press [CANCEL] button to cancel the string.



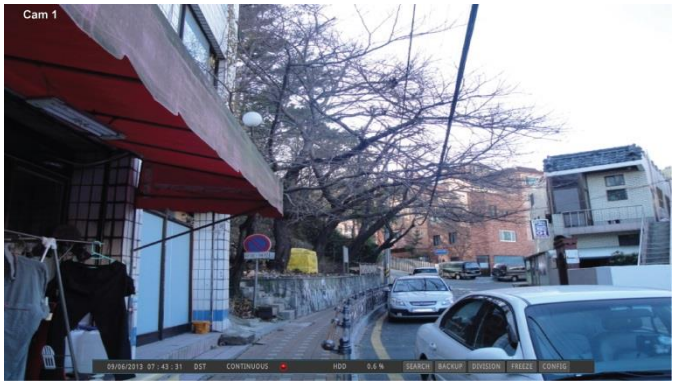
Default setting

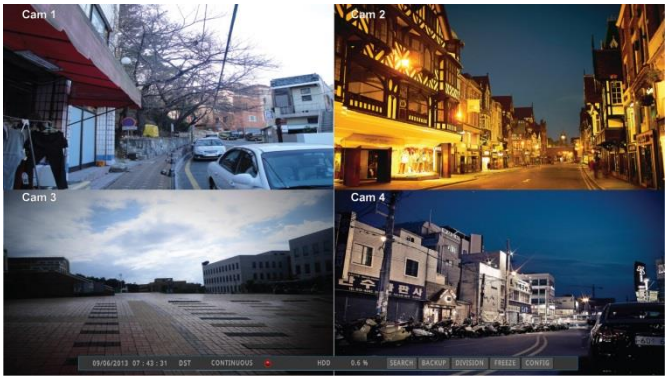
Check video

When turned on, DVR starts booting automatically and shows screen after the booting.

<reference>

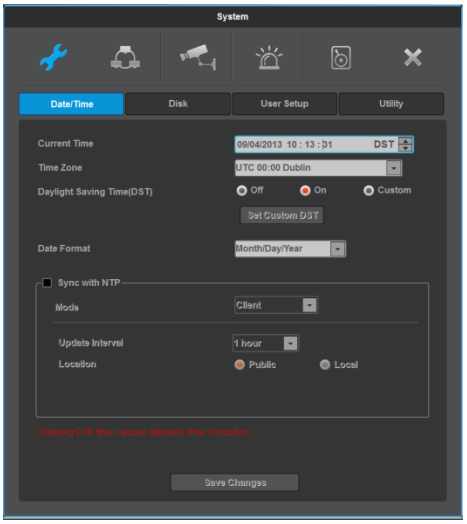
If user password is set, a box will appear to enter the password, and only numbers(channel) can be entered in the box.(It is not a default setting by factory





Date & Time settings

Menu → system → date/time



Standard time zone

Use the left or right arrow key on the front or the mouse wheel to select your time zone. (To go to the previous menu, press the [ESC] button on the front or click "X" with a mouse. This is the same for all OSD menus.)

Daylight Saving Time (DST)

On the "time zone" setting, "on" will be chosen when users click on regions where daylight saving time applies and "off" will be chsoen when regions without daylight saving time are chosen.

Users can check "off" if they don't need daylight saving time function for region where daylight saving time applies.

Please select "custom" if users want to set their own daylight saving time preferences. Select "custom" and DST setting will appear. "month/day" will set DST start/end at month/day/hour and "month/week/day" will set DST start/end at month/week/day/hour.

NTP function

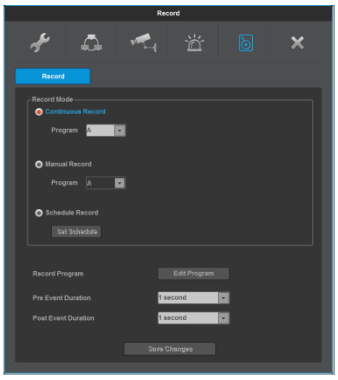
Please set NTP 'On' then select 'Public' in Client Mode for DVR to set time automatically via internet connection

Date Notation

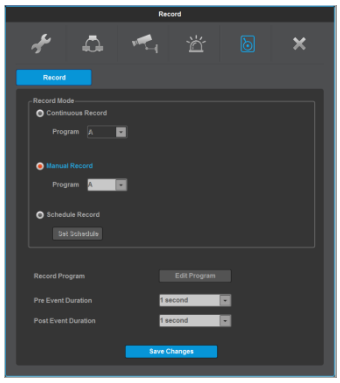
Please select "Date Format" and select one of 'YYYY/MM/DD, MM/DD/YYYY or DD/MM/YYYY

Recording configuration

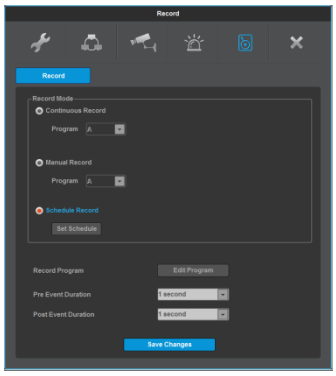
menu → recording → recording



[continuous recording]



[manual recording]



[schedule recording]

Continuous recording

Continous recording will automatically begin after the booting is completed and continous/event recording will begin according to the chosen program values.

Manual recording

Push REC button on the front to begin/end manual recording and manual/event recording will begin according to the chosen program values.

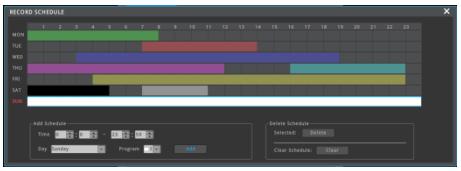
<reference>

If manual recording is chosen, exit menu and check the manual record indicator on the status bar to confirm recording. If there is no manaul recording indicator sign, press REC button on the front to begin recording.

schedule recording

Schedule recording will begin according to a pre-set day/time schedule.

Set day/time on " schedule setting" under the schedule recording mode.



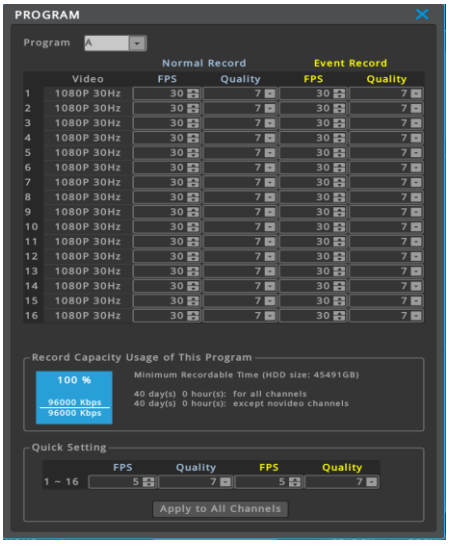
Program configuration

Menu → recording → program

Please set resolution, frame rate, and picture quality of each individual camera per channel in "Program menu" under the record setup.

<Reference>

How to check if it's recording : If set correctly and is recording, "REC LED" indicator on the front will be flickering. Also, status bar's save indicator will show [SCHEDULE], [MANUAL], or [continuous] indicating that all channels are recording. "REC LED" is turned off when it isn't recording.

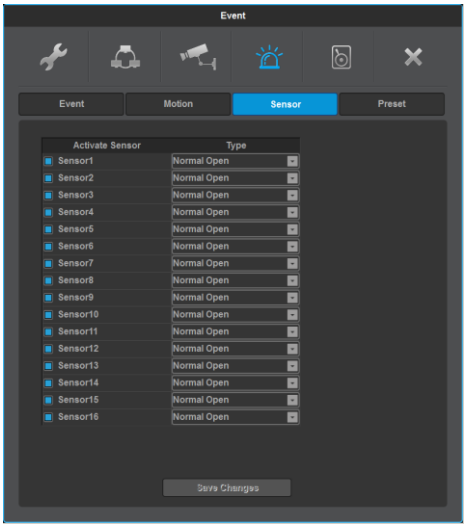


Use of Input/Output device

Setting sensors

menu → event → sensor

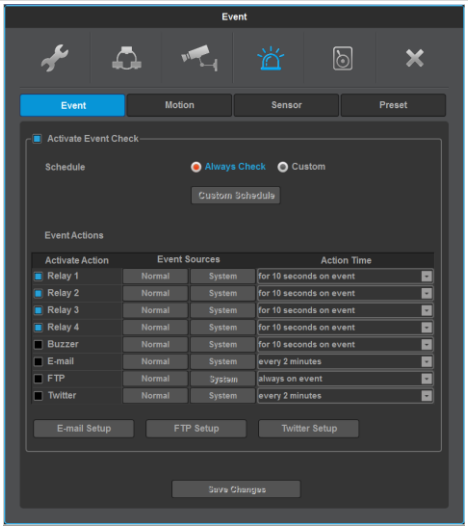
Please set each and every sensor. Select a sensor, and select a type and click [save] to complete the setting.



Relay setting

menu → event → event

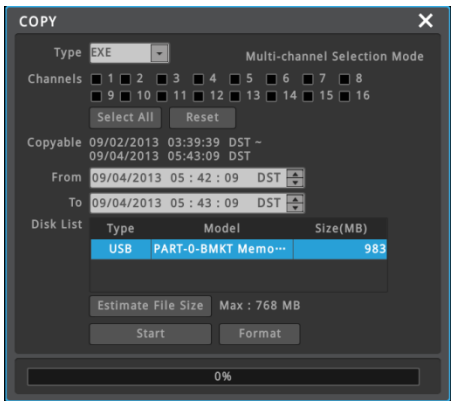
Select from normal event group, "sensor, motion detect, text, Video Loss" or system event source group, "Disk error, Disk full, Fan error, authentication fail, WRS registration fail, Mirroring fail, abnormal Recording stop" to run relay. Also, user can set working condition by schedule. In case of using control center thru. Network, relay could be run from remotely



Copy

copy

Press [COPY] button on Function menu to run COPY menu. When back up device is connected correctly, disk is recognized automatically as following image and it is processed inorder selecting copy type -> Setting copy section -> Selecting drive -> Copy execution



PTZ

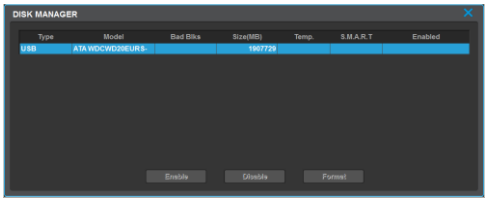
Menu → device → PTZ

At PTZ menu, PTZ's serial port per each channel, Protocol, PTZ address and Baudrate can be configured. Additionally, PTZ home function, Idle time, Parity bit, Stop bit can be configured.

HDD registration and format

menu → system → disk

After mounting HDD and booting, "Disk Manager" will run automatically as shown in the right picture.
If it doesn't run, please check the connectivity of HDD
(1) Select a HDD among listed HDDs. Activate the HDD and execute format.
(2) Check "YES" for the fomatted HDD..



<warning>
Please call Webgate or Webgate dealers for HDD compatibility

HDD replacement

(1) turn off the DVR, take out a HDD and install a new HDD.
(2) turn on the DVR again, open "Disk Manager". Select the removed HDD, and press [Confirm] to remove the HDD from the list.
(3) Select the newly installed HDD and format it after completing the activation.
(4) check the enabled box "YES" for the fomatted HDD.

<Note>

HDD re-use

You can use HDD that has been used before from DVR, without deleting its data.
Install the previous HDD in the DVR, select from the list and activate it. Enabled box will be checked "yes".

Remote monitoring and control

Via Internet/Intranet, user can use PC to control from the remote site. Enjoy the same control over DVR through PC as you'd have on the spot from the remote site.

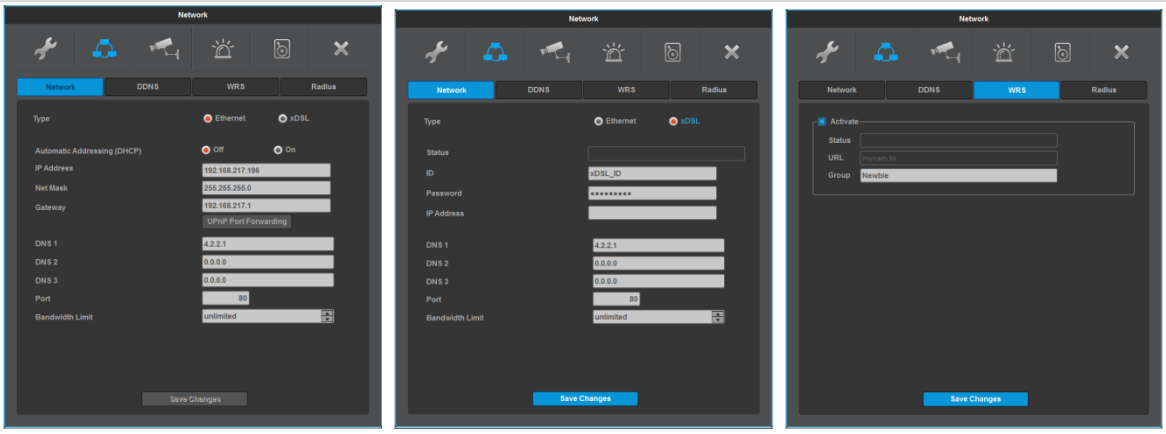
Ethernet Connection

Turn off DVR, connect Ethernet cable to DVR and turn it back on.

<reference>
To protect DVR from damage, after connecting Ethernet cable, input Power.
Plug in ethernet cable tightly. Input power on DVR and check its connectivity.

Network configuration

menu → network → network



Ethernet

Click Ethernet for type and enter given IP, Netmask, Gateway, DNS.

xDSL (PPPoE)

Change Network menu type to xDSL then go to xDSL menu.
Enter ID and Password assigned from PPPoE registration on xDSL menu.
Connection confirmation message will appear when xDSL connection is secured.

DDNS

If DVR is using dynamic IP, use DDNS function to get domain name to access to network regardless of IP change. Enter domain name on DDNS menu. For more information, please go to WNS(www.mycam.to), Webgate's DDNS service website.

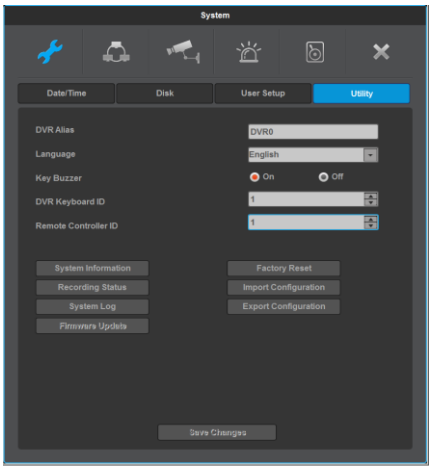
WRS

If DVR is using dynamic IP, use WRS service to automatically find the product IP to access. Configure GROUP ID to activate WRS function. Us GROUP ID or SN to Search product in CMS and it is recommended to create an unique GROUP ID configuration to avoid GROUP ID duplication.

Remote control ID configuration

menu → system → tool

When operating more than 1 DVR, it is possible to manage many DVR with one remote control by giving different ID to each and every DVR. A remote control can have maxium of 255 IDs and if users want to use every ID, then select ALL.
Select and control DVRs that have different ID with one remote control.



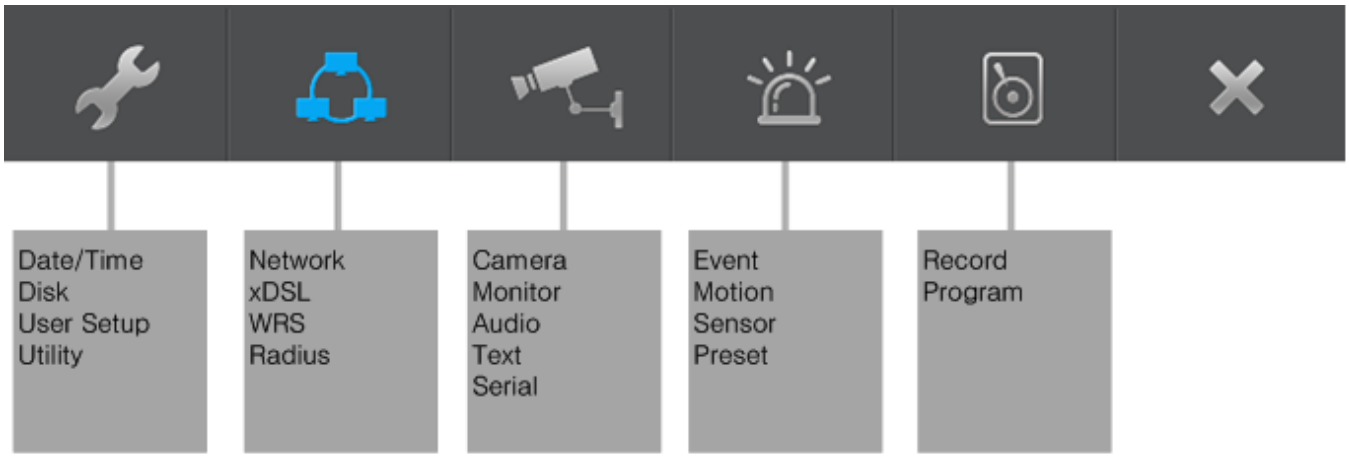
Selecting remot control ID

1) Point a remote control at DVR and press ID on the remote control.
2) Press ID on the remote control shown on the screen of DVR.
3) Press again ID on the remote control to complete the selection.

Menu usage

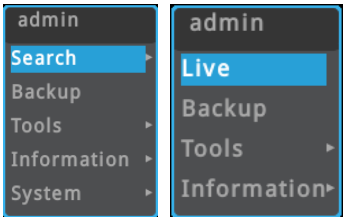
Menu structure

Refer to the below picture for The menu structure and read the explanation in each box per item for a set-up guide.



FUNC menu

To run Function menu, please, click the right button of mouse in live monitoring or playback status or push "Func" button on the front panel.
The Function menu enables every function of the product to be controlled by a mouse.
Each function can be executed by clicking left button of mouse.
The Function menu also can be controlled by front part of DVR's buttons.
Please refer to the picture to right for the Function menu structure..

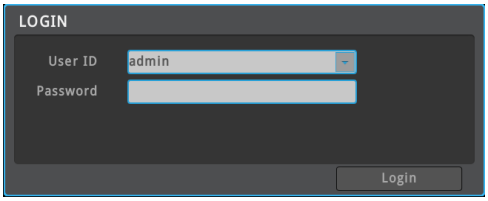


[LIVE] [PLAYBACK]

Monitoring

Login screen

DVR will turn on automatically once user connects power to DVR.
All LEDs are turn on and off in order when DVR boots up.
The basic screen will be black with login window pops up.

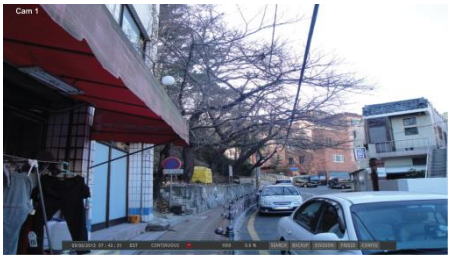


Basic screen

The basic screen will be maximum multi screen DVR supports and if rebooted after multi-screen mode has been modified, previous multi-screen mode will be shown.

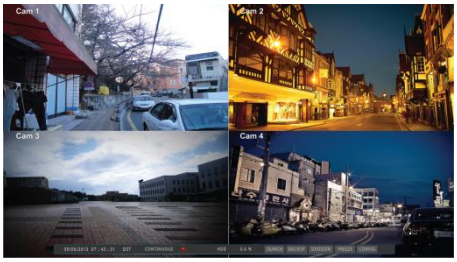
single screen

click the channel number you want to view or click the left mouse button.
Click [MULTI] button or click the left mouse button again to o return to multi-screen
.



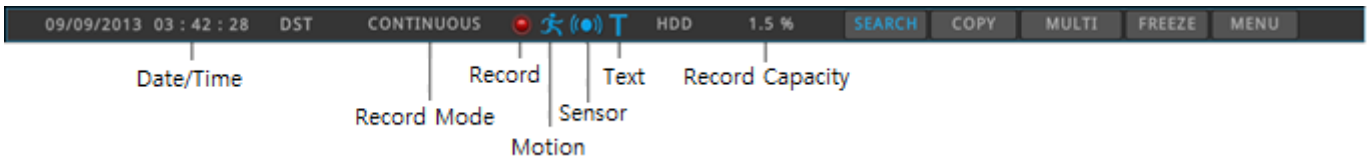
Multi screen

Click [MULTI] for multi-screen display or press multi under func menu to choose multi-screen mode.



Screen description

The status bar from monitoring screen shows DVR's current status which includes the following: Date/Time, Record status, Motion Detection, sensor input status, text input, Manual Record.



auto switch mode(Sequence)

Auto switch screen mode is a feature in which the selected channel or multi screen division switches in sequence with the time interval of 1 – 60 seconds.
(Please refer to "Monitor setup" for further configuration method).

Auto Switch mode can be set in every division mode by pressing the [SEQ] button.
Press [SEQ] button once more to leave from Auto Switch mode..

event screen

It is available to set the selected screen pop-up automatically when an event is triggered
Users can choose events for pop-up from event source. Event source supports 3 types of events: Sensor, Motion Detection & Text.

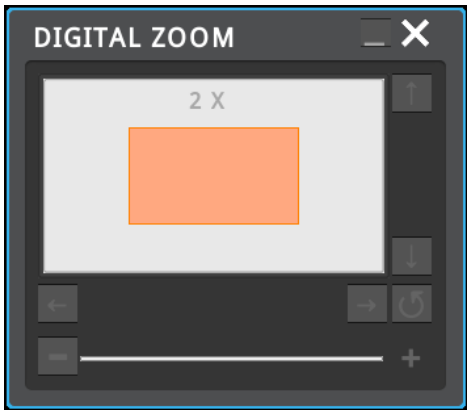
If multiple events are triggered, the corresponding screens will pop up automatically.
For example, if events are triggered in 3 Channels, they will be displayed in 4 screen division automatically. To return to the original channel, press the button of one of the poped up channels.
Press [ESC] to return to original channel.

<warning>
If Alarm pop-up is "Off", Event pop-up will not be enabled.
If event screen switch is set "Keep", it keeps showing pop-up image until users press a button. To return to the previous screen, please press any button.

Enlarged screen

Using D-Zoom on a single screen, users can enlarge the section they want to view..

Click on [Zoom] button or icon in single / full screen or [FUNC] button then select Zoom button to activate Zoom mode.
To expand or reduce, please use +, - button or use mouse wheel drag.



The initial location of the enlarged screen is the center. Use the direction keys to move the enlarged image 22 steps to left/right and 14 steps up/down.

Enlarge mode can be used between 1.00X ~ 10.00X range.
" " To return to the previous screen, select a button and press the enter or left click the mouse..

*Zoom function doesn't work in Multi screen mode, please go to single screen mode to use zoom function.

Pausing the live screen

Just like in playback, Live screen can be paused.
Click on [Freeze] button while live monitoring to pause image and to return to live again, please click on any button.

Snapshot picture

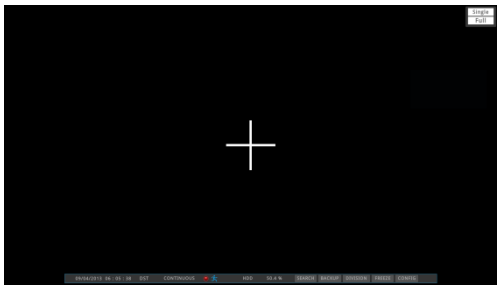
Please click on Snapshot while image is Freeze in live monitoring. Copy them to USB too.
Click FUNC menu -> Tool -> Snapshot to copy image to USB memory without stopping or pausing image.

PTZ control

Connect PTZ camera to DVR and set relevant protocol on "PTZ" under MENU, and users can operate PTZ while monitoring live images.

Instant PTZ

If Instant PTZ in Tool menu is set activated, PTZ mode will be on automatically upon single channel, which PTZ function is set.
+ mark in the center of image will be on while PTZ function is working.



PTZ

When PTZ is on, through PTZ button on front or PTZ buttons under FUNC menu, users can use pan/tilt, zoom, focus, aux and preset functions.

Focus
Click "near", "far" buttons to focus.

zoom
click "In", "Out" buttons to create a preferred focal point.

pan/tilt
pan/tilt function for PTZ configuration channel
Use "Up", "Down", "Left", "Right" to control pan/tilt.

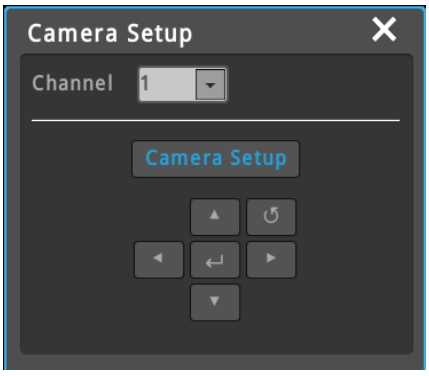
Loading preset
Used to move to set preset location.
Select wanted Preset number and press [Load] button.

Saving preset
Use to save new preset location.
Use focus/zoom/pan/tilt to move to a location you want to save it and select a preset number and press [save] button.

Auxiliary On
Use direction keys or mouse wheel to select aux number.(up to 16 Aux functions can be used). Select "on" and press enter or click a mouse)

Auxiliary Off
Use direction keys or mouse wheel to select aux number Aux
Select "on" and press enter or click a mouse.

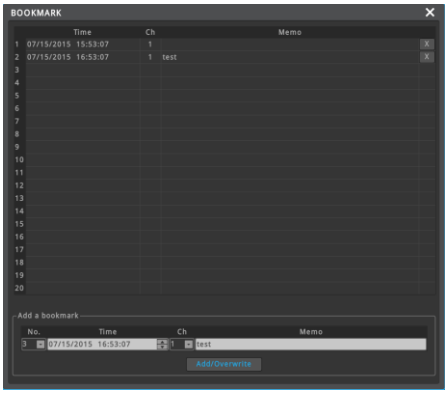
Camera Setup



Use to enter the menu of the connected PTZ device.
Use the front "direction keys" and "enter" button to set up a menu.
Press esc or "↺" to exit conso menu.

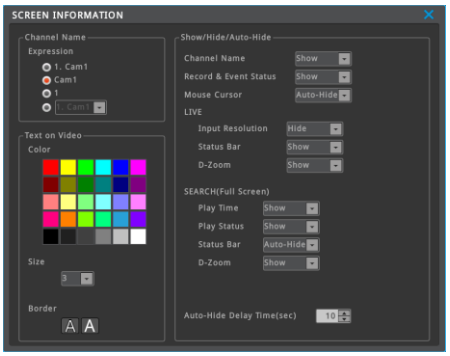
Bookmark

Add / Edit bookmark No, Time, Channel and Memo in [Tool-Bookmark] of FUNC menu while live or playback.
Run bookmark icon " " in Search, Copy, Thumbnail to load saved bookmarks.



Screen Information

Setup or change display information such as channel expression, color, size, status, show/hide/auto hide in [Information-Display] of FUNC menu.



Search and playback

Playback

Playback with Basic Screen

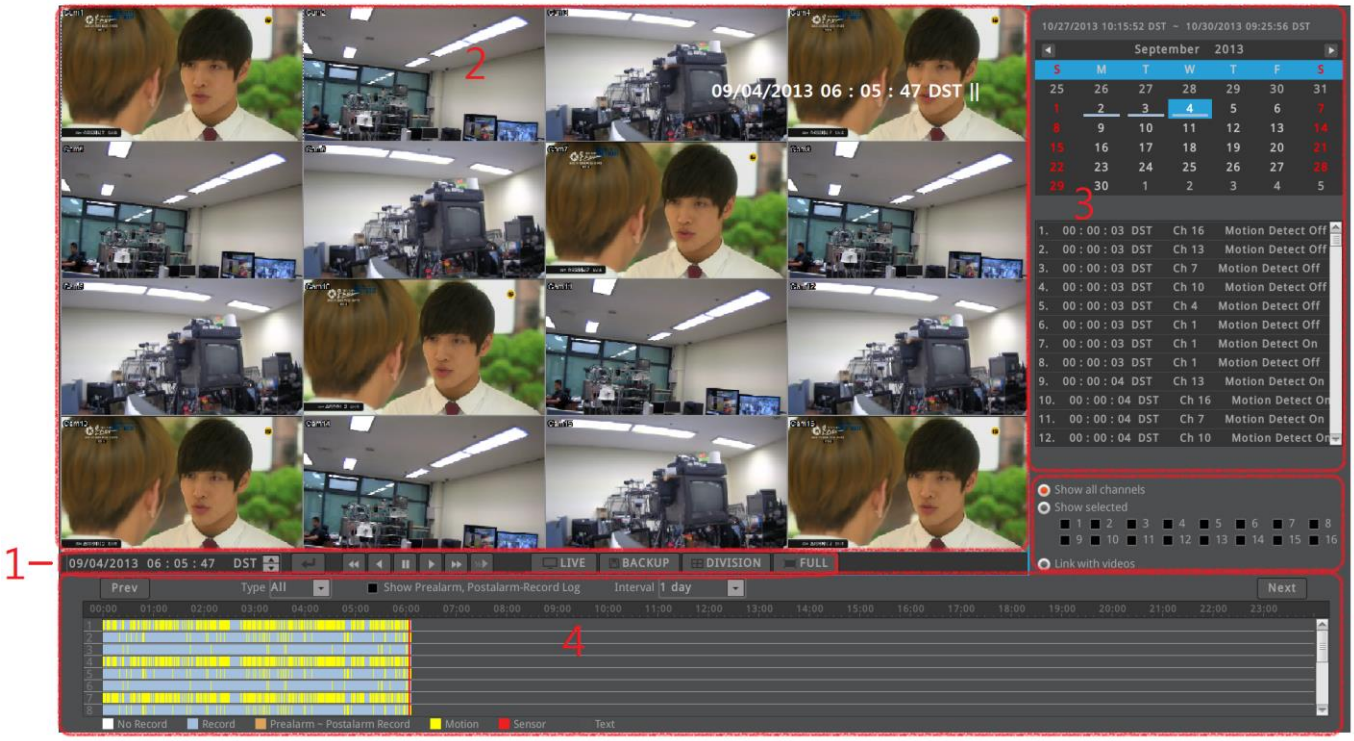
- ✓ In monitoring mode, Press [◀/▶] button to playback the recorded video in full screen
- ✓ If [PLAY] button is pressed, the last playback will run at 1x speed.
- ✓ If [FWD] button is pressed, playback starts from 1min earlier than recent time at 1x speed.
- ✓ If [REW] button is pressed, reverse playback starts from 30 second earlier than recent time at 1x speed.
- ✓ If [PLAY] button is pressed in multi screen mode, playback will start in multi screen mode.

Playback function

button	function	function description
◀ ▶	**playback**	Playback 1× speed. When using mouse, click search button under Function menu. If [◀ ▶]button is pressed in monitor mode, DVR replays from the last replayed position. Pressing [◀ ▶] button during playback makes reverse replay.
II	**pause**	Pauses the playback
■	**stop**	Stops the playback.
▶ ▶	**High-speed forward playback**	Different playback speed (in the order of x1, x2, x4, x8, x16, x32, x64, x1, x2, x4)
I▶	**Step forward playback**	During playback, Press **I**▶ while pressing **II** to step forward the playback. To return to normal playback mode, press [◀ ▶]
◀ ◀	**High-speed reverse playback**	Different reverse playback speed (in the order of x1, x2, x4, x8, x16, x32, x64, x1, x2, x4)
◀**I**	**Step reverse playback**	During playback, press ◀**I** while pressing **II** to step reverse the playback. To return to normal reverse playback mode, press [▶].
Jog/Shuttle *		use outside dial to forward or reverse the playback in x1, x2, x4, x8, x16, x32, x64 speed. Also, use inside dial to step forward or step reverse the playback. * Varies between different models

Screen composition/names of the functions

Screen composition



name		function description
1	Playback button	Use buttons to control the playback.
2	screen	Displays the playback videos.
3	log viewer	Displays the log seen on timeline
	Calendar/time search	Select a date on the calendar to view the data of the date.
4	timeline	Displays the info of the unit and search the playback sections.

Icon function description

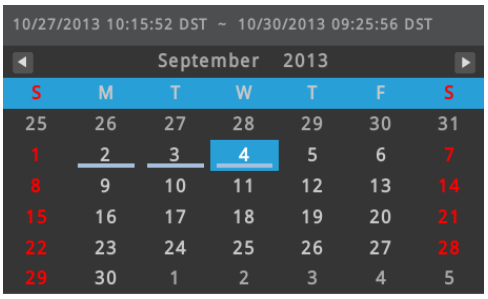
buttons	description
LIVE	Use to move to live mode.
COPY	Use to COPY
MULTI	Used for multi-screen mode.
THUMBNAIL	Use for Thumbnail search.
◀◀ ◀ ❚❚ ▶ ▶▶ ½▶ E	Use for control or manage of playback function.

Time search

Enter the date and time you want to search and press enter to move to the entered date and time.

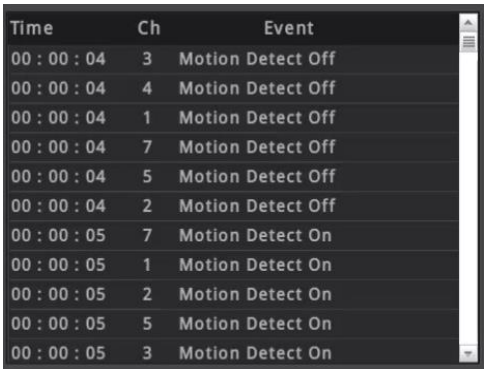
Calendar search

When calendar search is run, it marks the dates on which there were recordings.
Select a date from calendar you want to search, and it moves to that date.



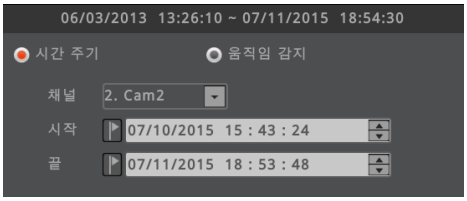
Event search

Event info(All, Motion, Sensor, Text, None) is shown on timeline.
Select a list to move to the selected time.



Thumbnail Search

Thumbnail search will show 35 different thumbnail image on detected images by time interval or motion. Click on selected image for playback or copy.



- Time interval : Select channel to search then set start and end time for search.
- Motion Detection : Select channel of thumbnail search then select area of motion to search.

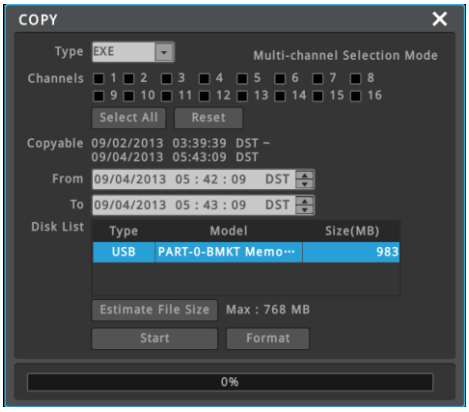
Copy

This is for copying recorded videos. There are 2 types of copying, EXE, and AVI.
Only authorized users by security settings can use the Copy function. For more about authority settings, please refer to (user setup) section.

To run copy function, press [COPY] on the product front or Click Copy button under Function menu.
If a user runs copy menu during playback, playback time will be set as backup start time.

EXE

Use USB stick to back up and use mini player or control center to playback. It is possible to select a part of channels depending on the choice of the channel list made by a user.

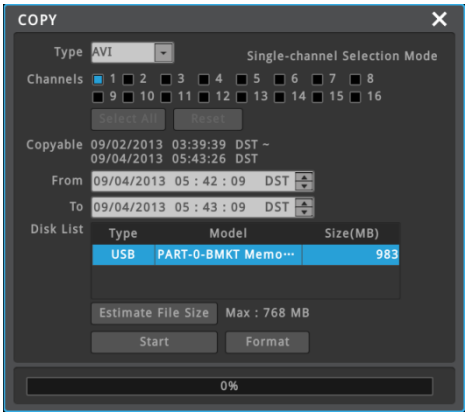


Name	function description
type	Select EXE using direction keys or mouse wheel.
channel	Press enter on a channel or right click a mouse to select a channel. (Select All : select all channels / Reset : cancel the selection of all channels)
format	Format a USB stick before copying. Press Format or right click a mouse to begin. (supports FAT32/NTFS)

<Warning>
If backup isn't 100% complete, then normal playback on PC isn't possible.

AVI

Users can backup via USB memory. The specific part of channel can be copied but it is impossible to copy multi channels at the same time. There is no specific player required but users can playback files using common media player.



<Caution>
If copied file doesn't play back, please, install integrated codec first.

configuration

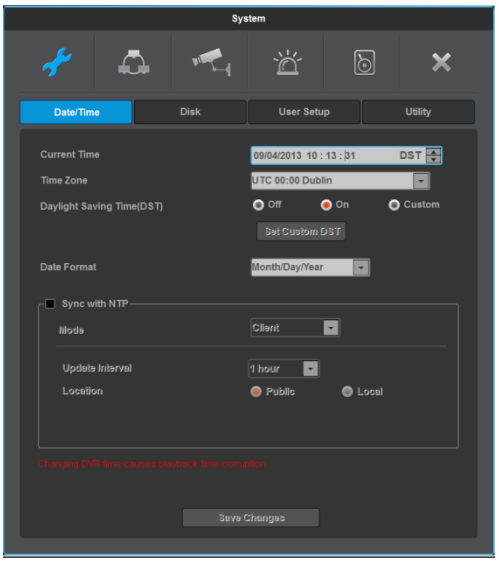
system configuration

Please set time/disk/authority.

date/time

menu → system → **date/time**

Set the product time in order to set recording settings.



It is very important for DVR to have the right time zone in which it is used for protection of recorded videos.
Default time zone is set at 'UTC 00:00 Dublin".

Time settings

<note>
Under recording, if a user changes time when it is already recording(saved in HDD), it will change the time of the previously recorded videos. Moreover, there will be a history of a time change on the system log.

Standard time zone
Set the timezone to the location a product is used in

daylight saving (DST)
This menu is synchronized with time zone configuration menu. It means only when daylight saving area is on, this function works. Daylight saving applicable area is the same as with Microsoft Windows time zone. Users can select whether to apply daylight savings or not when DVR is installed in Daylight saving applied zone

Date format
Date display settings. Select one of "yy/mm/dd", "mm/dd/yy", "dd/mm/yy.

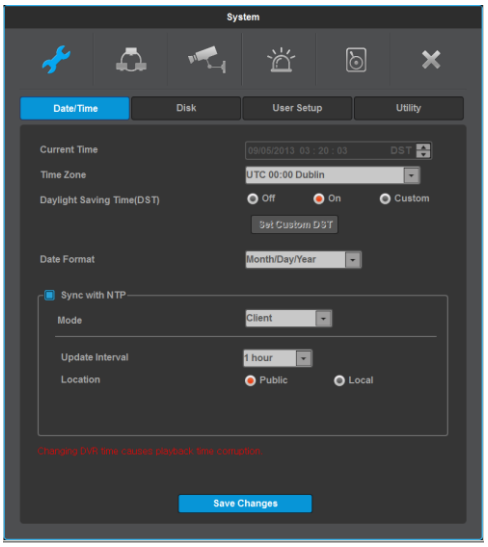
Save changes
To apply the canges made for date/time, click "date/time apply" button.

<warning>
Other configurations except date/time save automatically, but "date/time"
configuration doesn't save automatically since it can critically affect HDD recording file system.
To apply the changed value, user must click [date/time apply] button

NTP

menu → system → date/time **→ Network Time Protocal(NTP)**

NTP (Network Time Protocol) synchronizes the time of all connected device. To set DVR time to standard time open server which offers standard time on the network and client which is connected to open server to receive time and synchronize it with standard time. Besides that DVR can be set as server to offer standard time to other devices and can be set as both server and client as well.



NTP server location

Enabled when NTP mode is set as client/server. Select if NTP server is public or local.

NTP local server IP

Enabled when NTP server is set as local and sets server IP address. Enter NTP server IP address located in local network or DVR IP address with NTP mode as a server.

NTP mode

Set DVR NTP mode to client, server or both.

Name	function description
client	Receives standard time from external or internal server and enable Time synchronization of DVR
server	Make DVR a NTP server and provide standard time to other DVR or devices.
both	use both client and server at the same time

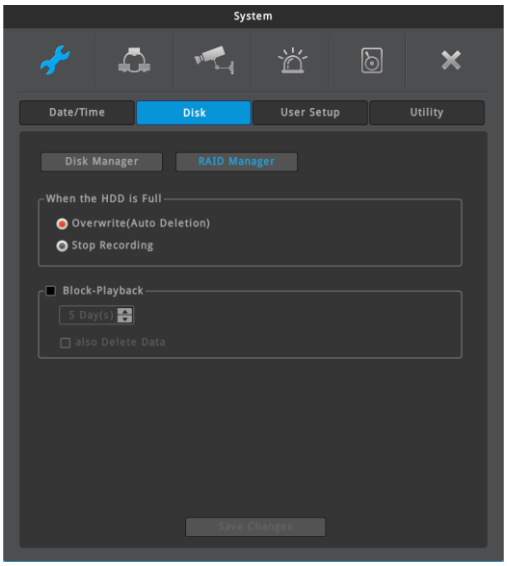
Interval

Configure interval of time sync.

Disk

menu → system → disk

Sets up a Raid which add/remove/format internal/external hard disk.



Over Write(Auto Deletion)

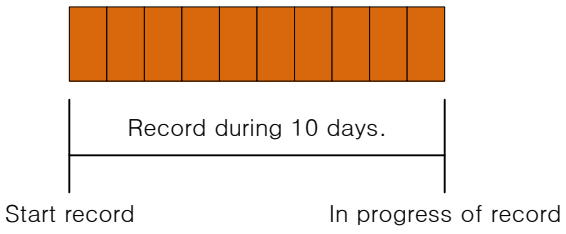
If there is no space in HDD, old data will be deleted automatically.

Playback block

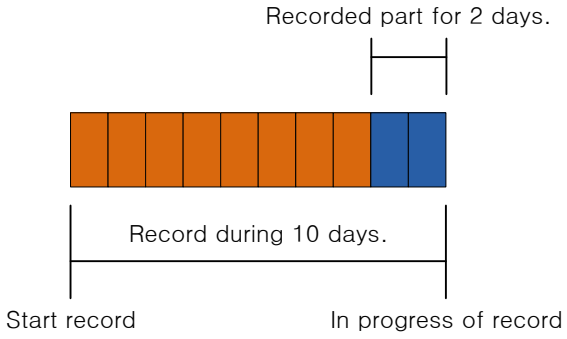
This function allows only recordings of pre-assigned date to be viewed.

For example, after 10 days of recording(picture 1), if playback block is set at 2 days(picture 2), then as shown

in the picture, only the last 2 days of the recordings can be played back.



[Picture 1]



[Picture 2]

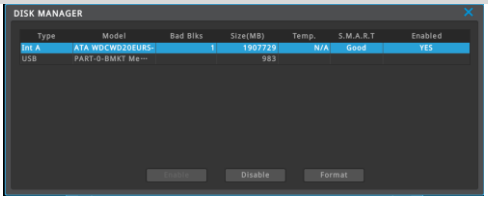
Data deletion

This function allows only recordings of preassigned date to be viewed.
For example, if playback block is set at 3 days, then DVR will only save data for 3 days and will delete data more than 3 days old even if auto-deletion isn't on.
Once deleted, it can't be restored so please be extra careful.

Disk manager

menu → system → disk → disk manager

This is menu for the management of internal or external HDD.
It manages HDD status, bad block, capacity, and whether to use HDD or not.



name	Function description
type	Displays the location and types of a disk. Int A (internal A HDD), Int B (internal B HDD), eSATA (external HDD), USB
model	Displays HDD model.
BAD block	Highlights the HDD with BAD block. 0 is shown when there is none. For HDDs not in use, no bad block is displayed.
size	HDD size will be in MB.
S.M.A.R.T	Displays if HDD can be used or not. Good : normal , Bad : abnormal (HDD needs to be replace.)
enable	Displays if HDD is in use or not.
	Yes : can be used / No : can't be used

HDD YES

- select HDD in HDD NO mode and click [enable] button.
- HDD which has previously been used by DVR will be used without formatting and HDD which has never been used will be formatted and then used.

HDD NO

- select HDD in HDD YES mode and click [disable] button.

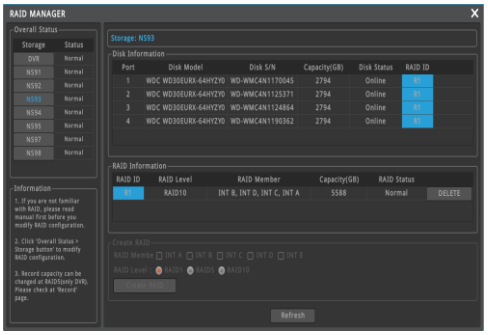
FORMAT

- can only run when enabled and click [format] after selecting HDD that needs to be formatted.

RAID manager

menu → system → disk → RAID manager

This is the menu that manages RAID of internal HDD and HDD installed in NS04R.



Steps to configure RAID

1) Select "NO" to all HDD activate in "Disk manager"
2) Select device of creating RAID (DVR/NS04R) in RAID MANAGER"
3) Select RAID Level(1/5/10) after selecting RAID members.
4) Create RAID by clicking "Create RAID" then all selected HDDs will operate in one "DVR RAID Disk"
5) If you activate "DVR RAID Disk" in Disk manager" it will be sued as storage of DVR."

name	function description
Raid Member	Select disks that need to be in Raid.
Raid Level	Select Raid Level 1, Level 5, Level 10.
Create Raid	Create Raid with selected Raid Member and Raid Level.
Raid ID	Displays Raid ID.
Disk Status	Online : HDD is connected, Offline : HDD is not connected.

What is RAID?

- ✓ Webgate's DVR models(HD1600F-PDR, HD1600F-R, HD800F-PDR, HD400F-PDR) support RAID function via built-in hard disk.
- ✓ RAID(Redundant Array Independent Disk) can store the data using the pre allocated parity territory if there is an error in hard disk.
- ✓ Supports RAID 1, 5, 10 and auto restore function when replacing a defective hard disk.

Of hard disks and RAID construction methods.

- ✓ Depending on the # of hard disks installed in DVR, availability of RAID level will differ.
- ✓ Refer to the below table for supported RAID level.

HDD #	Possible Level	Actual # for recording	Capacity *
2	RAID 1	50%	100% (480fps)
3	RAID 5	66%	66% (320fps)
4	RAID 10	50%	100% (480fps)
5	RAID 5	80%	66% (320fps)

* To use RAID without lowering performance of DVR, configure RAID only with NS04R

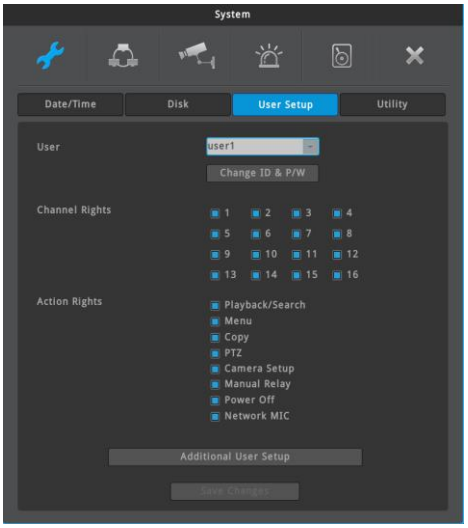
How to deal with a problem occurred?

- ✓ If a problem was occurred during RAID operation, RAID manager will appear, and the faulty HDD state will be changed to Offline or Bad from Online.
- ✓ In this case, please turn off DVR and replace the faulty HDD with same capacitor's new HDD. If you turn on the DVR, DVR will start rebuilding automatically. Once rebuilding was started, it will keep rebuilding at background even if you exit the menu. Please note that completion of proper rebuilding can ensure the reliability of RAID system.
- ✓ Please be careful not to replace the normal operation HDD. If you replace the normal operation HDD, you could lost the data. Be sure to replace the faulty HDD only.

User settings

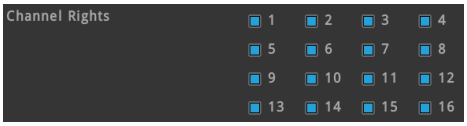
menu → system → user settings

DVR users will either be manager or user. Managers can use all functions of DVR without limitation and can set up user settings. Up to 10 users can be registered and each user can only use functions for which they've been given access to.



Channel Rights

A manager has an access to every channel.
A manager can give access to channels to each user.



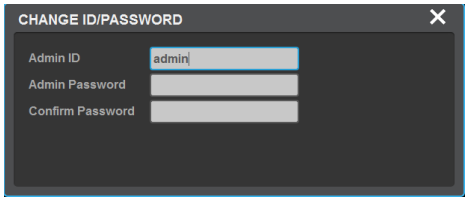
Function access

"Admin" has the rights to all the functions.
The action rights to each function(Playback/Search, Menu, Copy, PTZ, Camera setup, Manual Relay, Power off, Network MIC) can be given by each user.

ID & password change

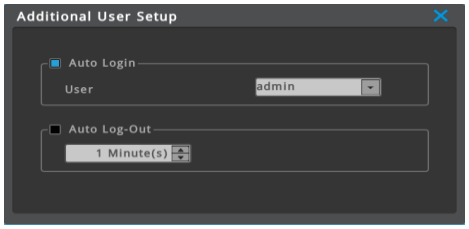
For User 1~10, max 20 and 8 characters are allowed for ID and Password.

<reference>
Default manager Password is "12345" and for user 1 ~ 10, password will take a pattern of "11111" for user 1, "22222" for user 2 and so on. So user 10 will have a password of "00000". To enter 0, press "10" on the front panel.



Additional User Setup

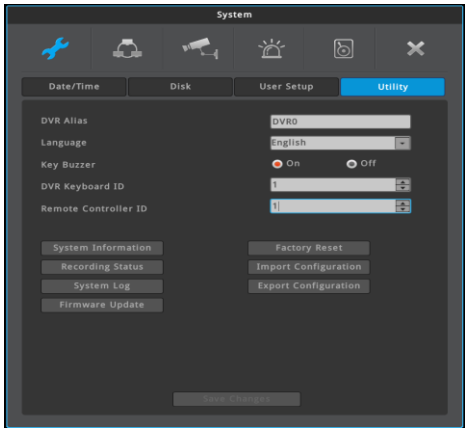
- Auto Login On: Select a user that can be automatically logged in when booting.
- Auto Login Off: Login popup will show up when beeting. Video can be monitored after login.
- Auto Logout On: If there is no control of DVR during the selected interval, DVR will be automatically logged out.
- Auto Logout Off: Auto Logout will not work



utility

menu → system → utility

Utility sets up DVR name, remote control ID, and language.



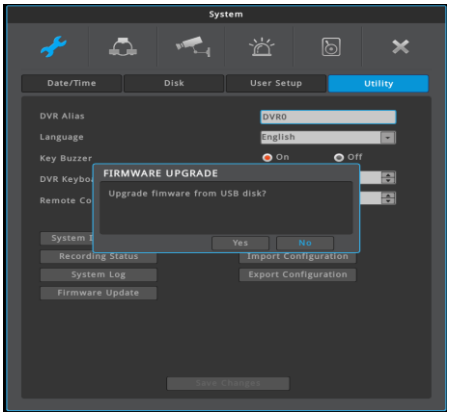
DVR alias
Set the DVR alias when connected to network.

language
select a language for a system.

DVR keyboard ID
This menu sets the address of keyboard when using all functions of DVR by keyboard. default value is "1". If user wants to control various DVR by one keyboard, its address should have different value. If designated address is configured the same as keyboard, user can control DVR function.

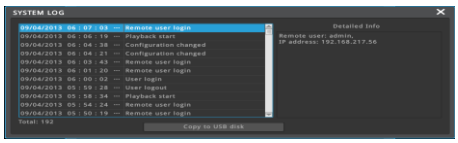
Remote control ID
Can set up max 255 remote control and all can be managed with a single remote control.

Firmware upgrade
Can update firmware by USB Memory stick



Steps for USB upgrade
1) Put firmware file into USB memory and insert it into DVR
2) Select "Firmware update" button
3) Select "Yes" to the popup "Upgrade firmware from USB disk?"
4) DVR will reboot automatically.
5) Firmware upgrade completed

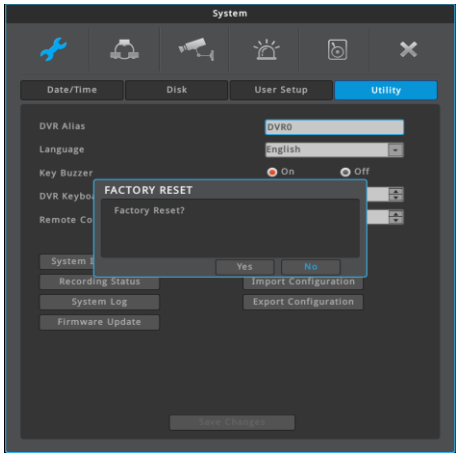
System log
System log shows the log list of system booting, user login, setting changes. User can scroll the list using up and down buttons on the front panel.



Factory reset
Change all set up values to default values.
Only a manager can use this function.

<warning>
Only a DVR system manager can use this function.

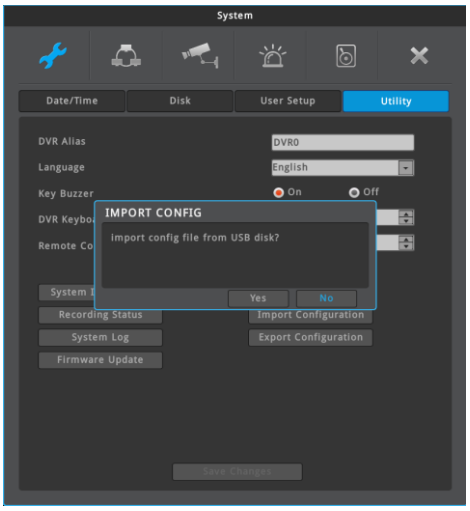
Refer to the (supplement – factor default value) for the factory reset.



Configuration Import/Export

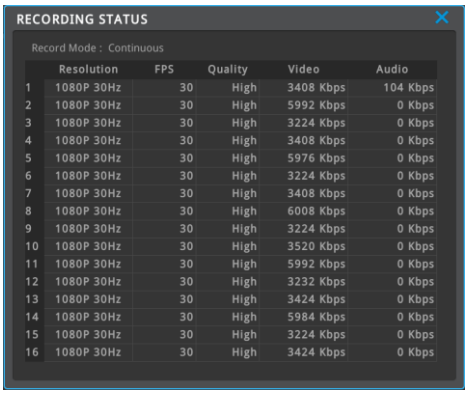
Export – Saves Configuration data in DVR to USB

Import – Apply exported Configuration data to relevant DVR or another DVR.



Recording status

Displays DVR recording status.



System info

Displays DVR system info

Network

Configure network info when DVR is connected to a network.

Network settings

menu → network → network **→ Ethernet**

used to configure the relevant network info when DVR is connected to network.

type

Select Network type(Ethernet/xDSL). If DVR is connected to cable modem or lan, select "Ethernet.

If DVR is connected to xDSL, PPPoE type, select xDSL. But if it is not PPPoE type, even if it is xDSL, select 'Ethernet'.

DHCP

If Network to which DVR is connected has a DHCP server, it, assuming it is enabled, will automatically assign IP address to DVR.

IP address

IP Address is for the connection between DVR and Control Center and also for web connection from Webviewer. (But, Net Mask, Gateway should be configured.).

Net Mask

Net Mask makes range of IP address available.

Gateway

Gateway address must be entered for DVR to connect to external network and gateway address is given by network administrator.

DNS server

DNS must be entered in order to use various networks such as, WRS, NTP, e-mail, and twitter. Contact network administrator for DNS address.

UPnP Port Forwarding

When using Internet Sharing device supporting UPnP, this function eable all connected DVR to do Port forwarding and they can be connected to Internet with IP address of Internet Sharing device.

(1) Configure two DVRs with DHCP On.
(2) Please, check if DVRs which are connected to Internet Sharing Device are allocated with official IP.
(3) Configure DVR port of DVR(A) and DVR(B) as 81 and 82 individually.
(4) Configure UPnP function of Internet Sharing Device as "ON".
(5) Configure UPnP Port Forwarding function of DVR as "ON".
(6) Please, check if Port Forwarding Status message is changed from "Not Available" to "Port Mapping is OK".
(7) Finally, if user accesses DVR(A) with the IP address with port number 81 or DVR(B) with the IP address with port number 82, user can access DVRs.

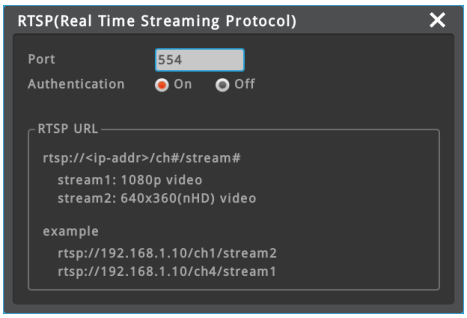
Port

Register port # in DVR and use it to connect to control center or webviewer.
Default port is 80 and be careful in entering the port # when used with PPPoE modem and router.

Bandwidth limitation.
Bandwidth is to configure the maximum transmission speed. Its default value is unlimited and users don't have to set bandwidth value if there is no need to limit the network data size of DVR.

<warning>
Please consult DVR manager if you want to modify bandwidth value.

RTSP



It is short for Real Time streaming Protocol) and streams real time live image of DVR

Authentification On: Only authorized users can view RTSP video.
Authentification Off: Non-authorized users can view RTSP video.
Stream 1 transmits streaming at Full HD (1930*1080)
Stream 2 transmits streaming at nHD (640*360)

In order to view channel 1 of DVR (Ex: 192.168.1.10) input "rtsp://192.168.1.10/ch1/stream1".

<Notice>
Use VLC player to view RTSP video on PC

IP filtering

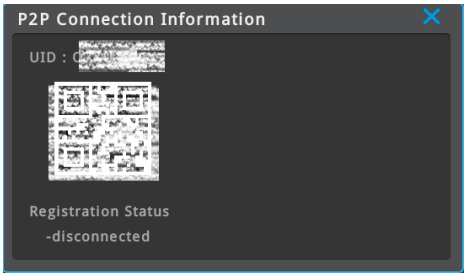
Maximum 10 ranges of IP addresses can be set to allow or deny remote network connection

Allow
Allow 192.168.0.0 ~ 192.168.0.255 > another IP addres that does not in the range will not be allowed for remote network connection

Deny
Deny 192.168.0.0 ~ 192.168.0.255 > another IP address that does not in the range will be allowed for remote network connection.

<Notice>
IP filtering limits remote connections to DVR Please be aware of what you are doing before you change this page

P2P *

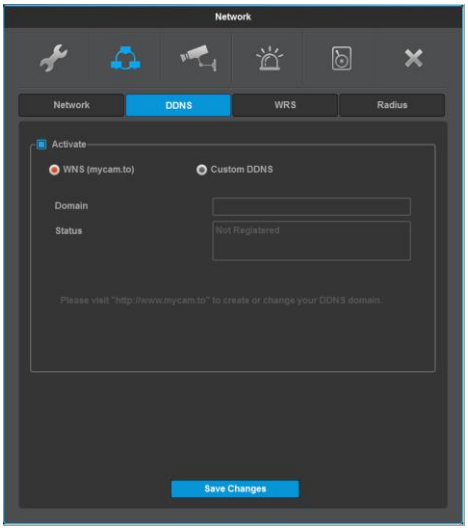


Input UID of P2P connection information in Webeye (Android or i-phone) or scan QR code. Remote network connection can be made easily without further configuration.

* P2P function might not be supported depending on the product models

DDNS

menu → network → DDNS

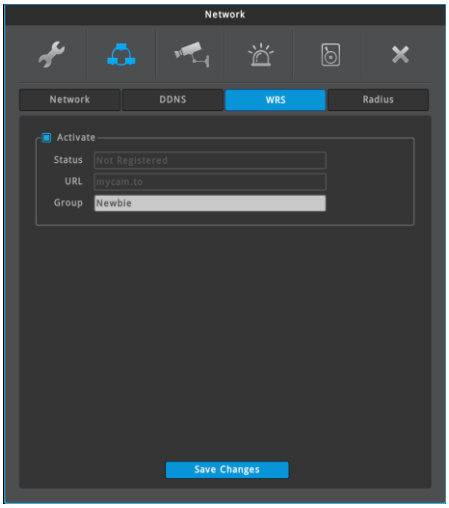


Through Webgate's own DDNS service, WNS server, users can give a domain name to DVR. Using a PC, users can register for a membership and create a domain name even if they don't register at www.mycam.to.

If connected to DDNS correctly, users can connect to status and print connection successful message. If users choose to use Custom instead of WNS, they can register a domain name at www.dyndns.org or www.no-ip.org.

WRS

menu → network → WRS



If DVR is connected to a cable modem or xDSL model, IP address will change every time it tries to connect to ISP and users will not know the changed IP address. However, if DVR with flexible IP address is registered in WRS server, control center can easily access to the registered DVR despite changed IP address

Interval

WRS will renew its IP addresses in WRS server every 5 min if it is activated

group

Group name should closely be related to DVR.

Using a group name, users can find DVR connected to flexible IP on Control Center and connect it

URL

WRS website address is mycam.to.

Status

WRS server registration status of DVR

xDSL

menu → network → network **→ xDSL**

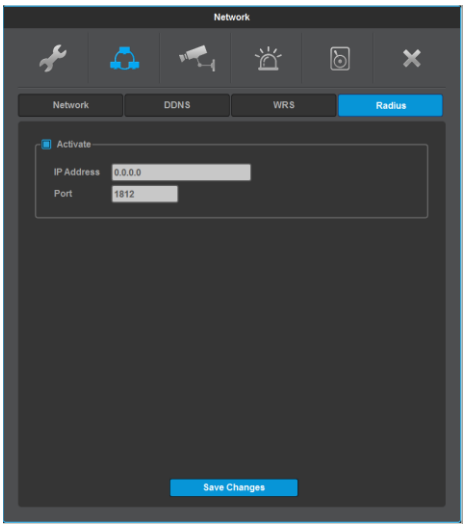
DVR is connected to xDSL line and use PPPoE type, please change type by xDSL and configure user ID and Password. User ID and Password should be same as xDSL.

User ID/Passwor
Configure user ID and Password when DVR is connected to xDSL.

Status
It shows connection status of DVR.

Radius

menu → network → RADIUS



Radius function manages many DVR accounts with one account using Radius server.

Radius menu configures status, IP address, and port. Status should be configured as enable in order to use Radius function. Port by default can use 1812 and if server assigns a port, then it needs to be configured..

'User ID', Password' and 'Radius Shared Key' are needed from administrator of Radius server after forwarding DVR account information to him.
received 'ID/Password/Shared key' are used to register DVR at Control Center.

<warning>
please consult a server manager to use Radius function.

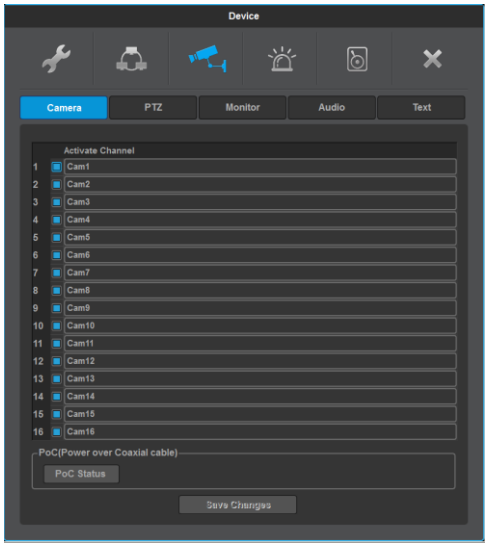
Device settings

In Device setup, user can configure camera, monitor, audio, text, serial which are connected to DVR.

Camera

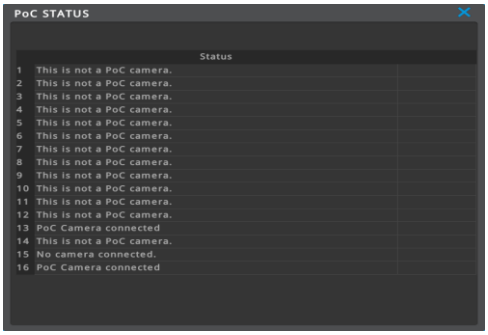
menu → device → camera

At this menu, user can assign [camera name], and set each camera to use or not to use.
If the operator do not want live monitoring and recording for the video connected channels, the channels must be set as nonuse.



PoC Status*

Check the status of PoC camera & PoC adapter that are connected to DVR.



Reactivation

If there is an overcurrent in a channel to which PoC camera is connected, "thunder icon" will be displayed on the channel and will automatically shut off the power. Press reactivation to supply power after resolving an overcurrent problem.
Reactivation button will only be shown when there is an overcurrent and is hidden under normal settings.

PTZ

Menu → Device → PTZ

Port
Choose one of COM2/COM3/CoC*.

Device
Select a device that is connected to the port.

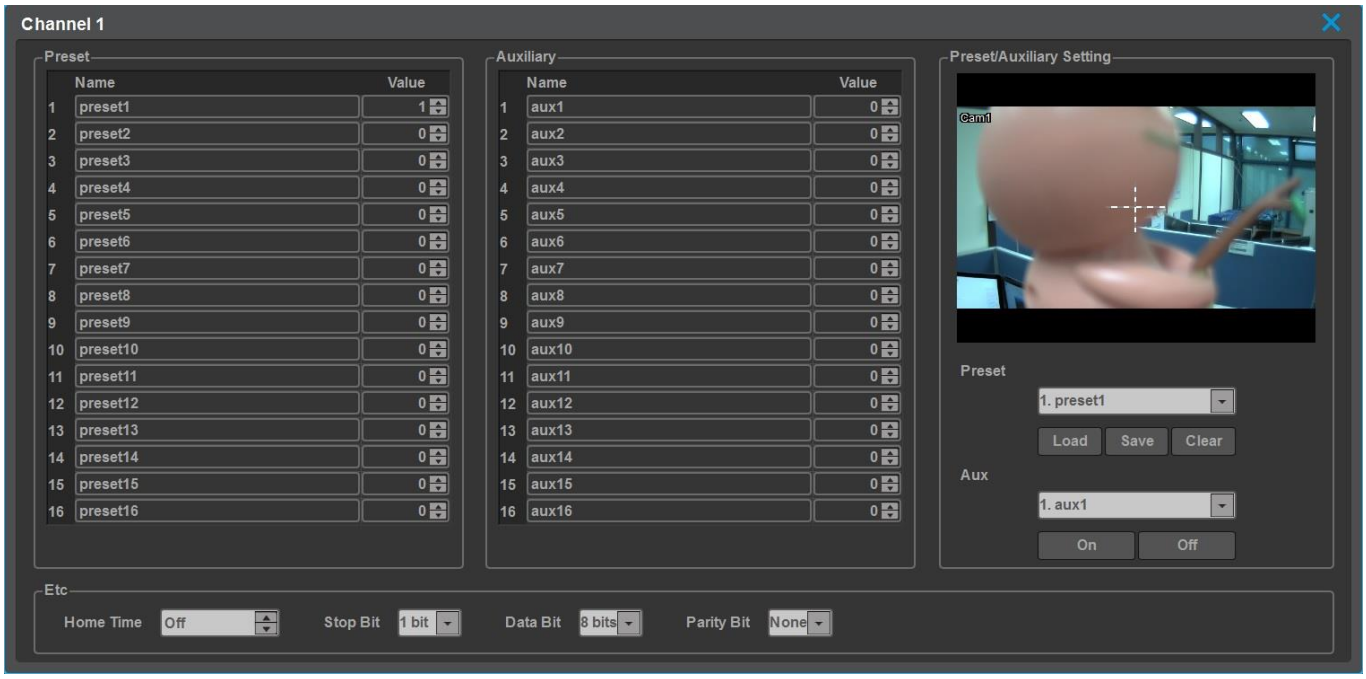
Address
Select the device's address that is connected to the port.

Baudrate
Select the device's baudrate that is connected to the port.

* Please refer to page 5 for PoC/CoC

PTZ ETC

Preset, Auxiliary and home time can be set up



Preset

Name and value of preset can be set. Up to 16 presets can be registered.

Auxiliary

Name and value of auxiliary can be set. Up to 16 auxiliaries can be registered.

Etc

• Home time: In case there is not PTZ control for the selected interval, it moves to PTZ home that was previsouly set in PTZ camera.

• Parity bit/Stop bit/Data bit: Apply the same configuration as configurations of external device

Preset/Auxiliary Setting

• Preset: Load the selected preset, save or delete preset

• Auxiliary: Turn on or off the selected AUX

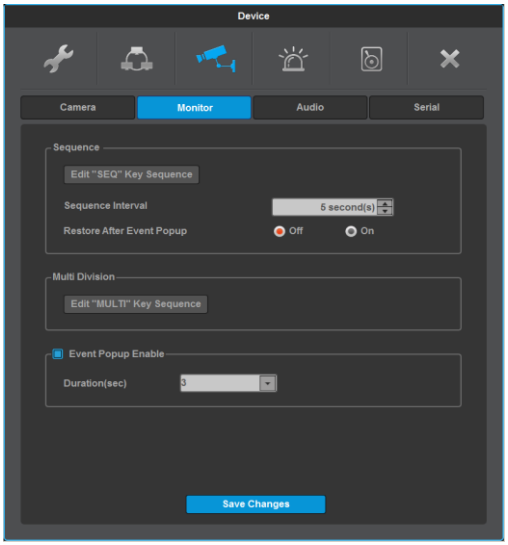
<Notice>

COM1 is fixed with RS-232C and COM2/COM3 are fixed with RS-485

Monitor

menu → device → monitor

Configure SEQ, MULTI and event pop up.



alarm pop-up

If specific channel uses MD, Sensor Input, it makes the relevant channel pop-up as single or multi screen. To use this function, event should be set to event schedule in recording set up and MD / Sensor configuration should be done also.

If event popup time is configured "off", event popup will not work.
Event pop-up can be configured per second from 1 to 10 seconds.
If user set Event pop-up as keep, it will show continuously on the popup screen until the time user push any certain button

Sequence configuration

This menu is to edit function of user sequence configuration. User can configure 16 sequence modes and dwell time is available to set from 5 to 60 seconds.

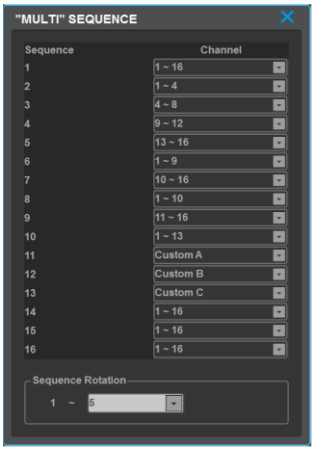
For sequence mode, users can configure channel or division mode and sequence time from 5 to 60 seconds. If user set it to Off, this function will not work.

The default value of "Restore after Event-Popup" is off. If alarm popup occurs during sequence mode, sequence mode will be stopped under this condition. But, if "Restore after Event-Popup" is on, sequence mode will be activated again after alarm popup time finishes.

Sequence mode starts when user pushes [SEQ] button.
To escape from Sequence mode, please, push [SEQ] button one more time.

Multi set-up

Select multi screen order through multi set-up. Maximum of 16 screens can be set-up..



audio

menu → device → audio

Configure audio channel, audio recording, volume, synchronization, mixing on this menu.

Audio channel
Slelect a channel for audio.

Video channel
Configure if selected audio will be synchronized and heard through the video channel.
For example, if audio channel 1 is synchronized with video channel 4, then audio will be heard through video channel 4.

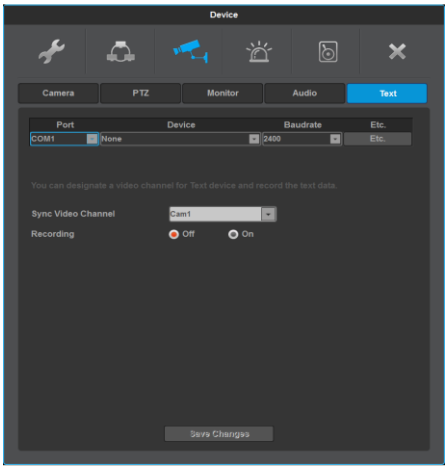
Save audio
If users want to save the audio in use. If set "off", audio will only be heard with live-video and if set "on", then audio will be heard during the playback

During playback, Audio is output together.

Text

menu → device → Text

Configures text info and click "Text" to configure the text.



Recording
Set On/Off of recording of Text input.

Sync Text with
Select channel to synchronize with text.

device (COM 1)
Choose from Manual, Star Finger 007, VSI Pro for text input device.

Star Finger 007 and VSI Pro can be used with defined protocol, and other devices with Manual mode.

Manual Text Device Setting
Manual requires header/delimiter/lines/timeouts to be exact. Values for these are different for every device so please call the store you purchased the product from or refer to the manual.

Header check
If Text device is set manually and there is the text pointed out as Header, it is regarded starting of text information from the relevant letter. In case of not using Header, all text after Delimiter is regarded as new text.

Delimiter
It is a constantly inserted info to search for the end of the line. If DVR finds delimiter, it will see the place as the end of the line.

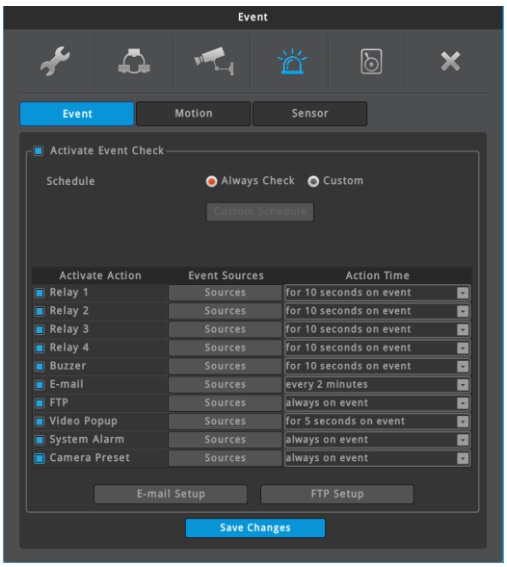
The number of Line
It is to define how many lines single information has. For example, if user sets 30 lines, system recognize single information binding 30 lines.

Time out
If configured line is not full, after the last information, if there is no further information during certain time range, system deal with it as one information.

Event Configuration

Event

menu → event → event



Event set up has 4 set up procedures, event, motion, sensor, and preset.

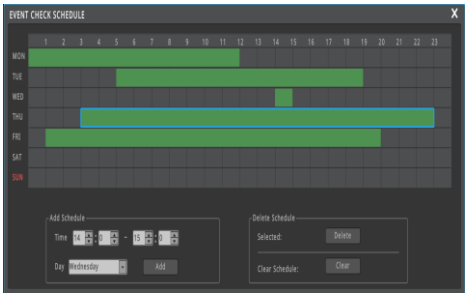
event
configures time range with event synchronization and can be configured as off, always, and custom

"always" recognizes and reacts to event when it is configured. "custom" can only use event during the time preset based on schedule settings

If custom is configured, event time can be configured per day/time through schedule setting window

If time isn't configured on custom or Off box is checked, DVR won't recognize any event and thus no event motion or event record will run.

User schedule setting
If day/time are set, it will display on the graph right away.
Select record begin/end time on the graph and click **them in order,** and the corresponding info will be displayed on day/time.



- day : set applicable day
- time : set applicable time
- register : schedule registration function
- delete : schedule unit delete function
- Clear : whole schedule delete function

How to delete
Select item and click the Delete button.
If users click the delete button without selecting an item, previously
selected item will be deleted.

How to delete all schedules
Click All Schedule Delete buttion.

sync event

Configuration for Event synchronization

Relay

When events that have been selected in "Event Sources" occur, event notification by relay goes on for the time period set in "Action time"

Buzzer

Event notification by buzzer goes on for the time period set in "Action time".

E-mail Setup

When events occur, DVR sends text information and image of event to certain email address

FTP

When events occur, DVR sends image of event to deginated FTP server

Video Popup

When events occur, video of event pops up and remain for the time period

Camera preset

When events occur, PTZ preset runs according to previsous settings

Action Time

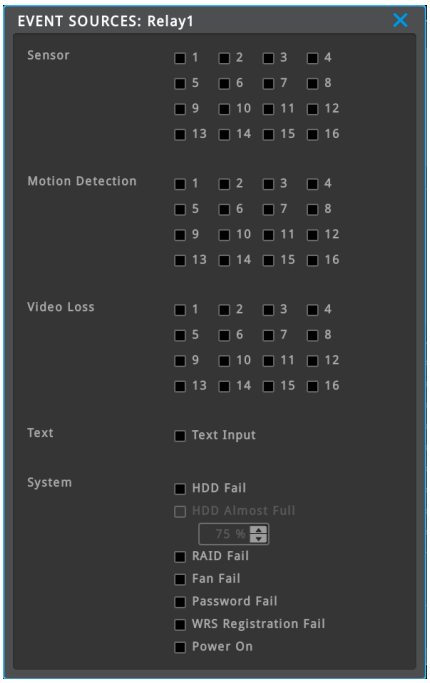
- Dwelling time of relay or buzzer: Relay or buzzer remain for the selected time preriod
- E-mail : Sends email according to the interval
- FTP, System alarm, camera preset: Always operate on event

<Notice> If Action time is off, action for events will not work.

EVENT SOURCES

Check Sensor, Motion detection, Text or systems for activating event

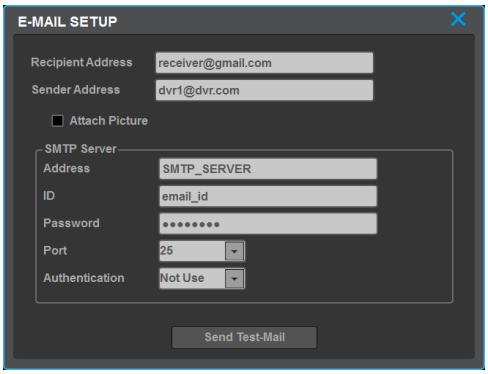
System event sources of HDD Fail, RAID fail, fan fail, password fail, WRS registration fail and power on can be checked (some or all)



E-Mail Configuration

Recipient Address

Input E-mail address with receiver's E-mail info.
E-mail format should be xxxx@xxxxxx.xxx and the users must only use combination of numbers and the English letters



Sender's E-mail address

Sender's E-mail address is set when user use E-mail for output selection and user setup E-mail address as xxxx@xxxxxx.xxx.

Picture attachment

When sensor, motion detector and video loss occur, relevant event info with channel video will be sent to an e-mail. Only system event info will be sent for system event.

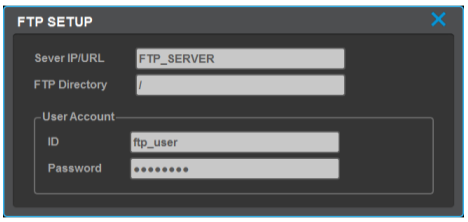
Authentification

There are a few ways to send email (No authentification, SMTP server authentification and TLS authentification.)

- No authentification: sends email to the recipient address without server authentification
- SMTP authentification: sends email to the recipient after SMTP server authentification. The recipient address must support SMTP authentification
- TLS authentification : sends email to the recipient after TLS server authentification.

FTP Configuration

The DVR sends 1 video image per event to a FTP server when an event occurs.



<warning>
Since FTP just transmits an image, if there is no image system event, it is not supported.

Server URL

Enter the FTP server address to send image

user ID

Enter the relevant ID when asked for FTP server authentication.

password

enter FTP server password.

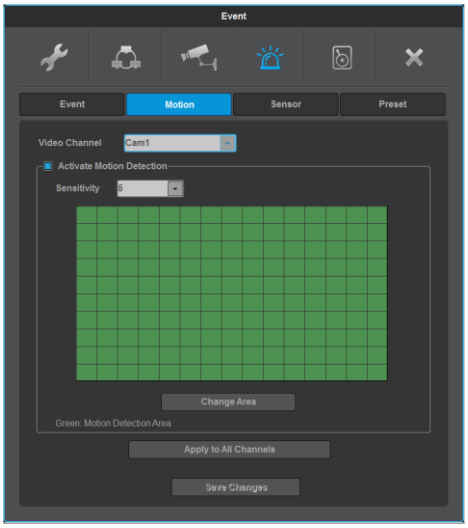
FTP Directory

Select Folder to save image
If folder is not indicated, the image is sent to the folder which server selects

Motion detection

menu → event → motion

The Motion detection can be used to notify user of detected motion on each channel or all channel.



Channel

Configure All or each channel.

Sensitivity

Sensitivity can be configured from min.1 to max 10.

Area

Area configure detection when a motion is triggered.
User can select all or clear all. In case of configuring each channel, it is available to set all, clear all or define user area.

user area

When selecting a channel, user area can be configured.
1 grid size is **15x10** and factory default value is "All grid selected".
Press "change area" button to open motion detector enabled area set up window.

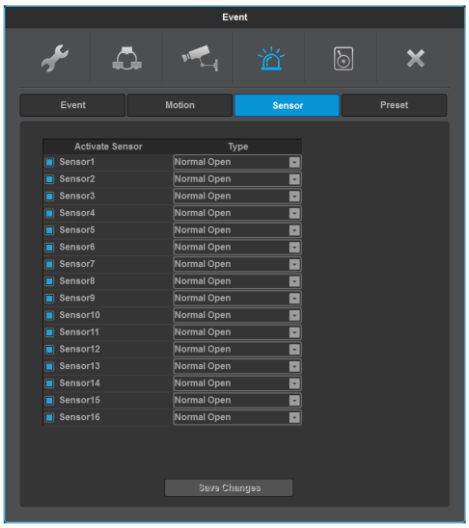
Users can set motion detection area in screen. The motion detection zone by setting is indicated in translucent green.

If an area is set up when motion detector set up start point is enabled, all values will be applied as disabled and if set up when motion detector set up start point is disabled, then all values will be applied as enabled. In other words, opposite set up to the value of the initially selected area will be applied.

sensor

menu → event → sensor

This menu is to setup the existing sensor input and the type of sensors. If sensor is selected as N.O, or N.C. it is applied to all channels. Users can set different options like N.O, N.C, or Off after selecting each channel.



Name	description
Normal Open	If sensor's electric contacts become connected, DVR recognizes it as an alarm.
Normal Close	If sensor's electric contacts become disconnected, DVR recognizes it as an alarm.

Recording set up

There are 4 modes for recording – schedule recording, manual recording, Continuous Recording, and Event Recording. Schedule Recording records automatically in accordance with the configured schedule and Manual Recording records via pushing "REC" button.
Continuous Recording records continuously upon initial system boot up. Event Recording records when an event occurs

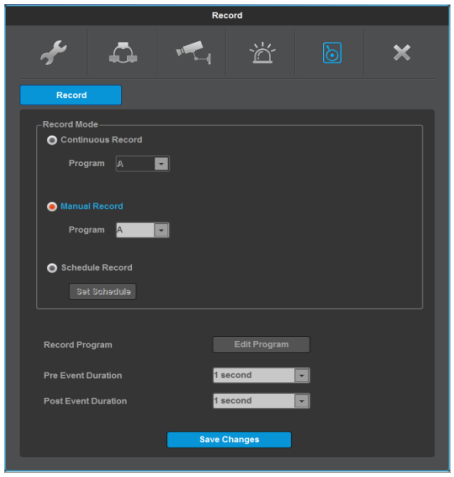
Recording

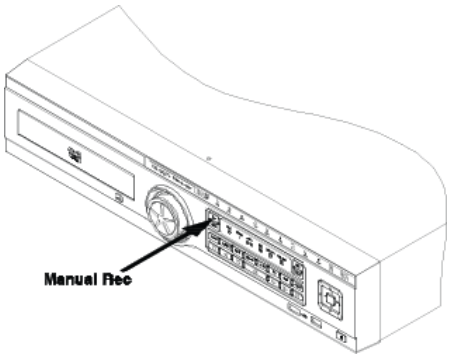
menu → record → record

Users can select the recording mode from manual, continuous, or schedule recording.
And their resolution, frame rate, quality will be in accordance with the program Before recording set up, check the frame rate, video quality of a program per channel.

Manual recording

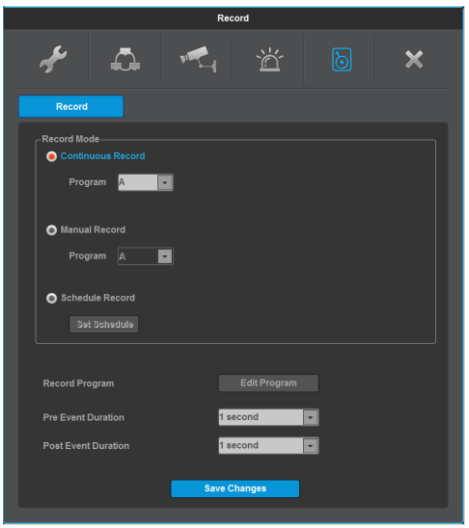
Manual recording will only run when recording mode is set at manual recording.
Manual recording begins when a user presses [REC] button on the product front after setting at manual record and selecting a program. To end the manual recording, press [REC] again.





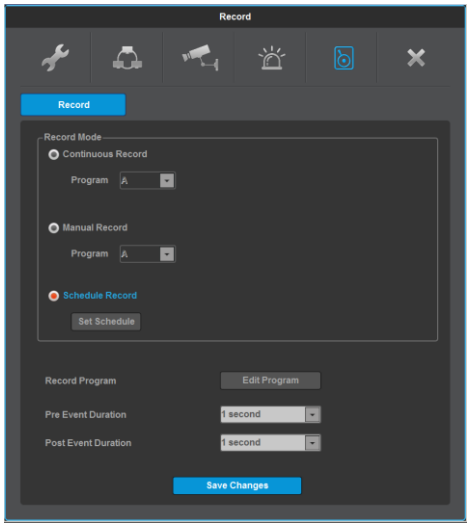
Continuous recording

Recording mode must be set at continuous recording and preset program will begin recording once booting is complete.



Schedule recoding

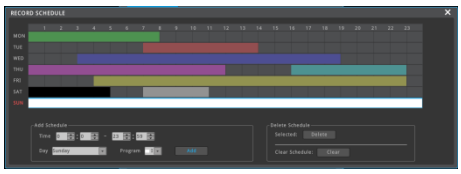
It records according to the programmed schedule automatically.
select "Schedule record" and configure day and time



. Check and select each program default value and select one of 9 programs from A to I. User can not set two different program to one schedule.

Configuration

Configure a program, time on a date and the info will automatically be displayed on the graph.
If select recording start/end time the table and click them in order and the corresponding info will be displayed



- Program : Set recording program(A~I)
- Time : Set time to apply
- Registration : Schedule registration
- Delete : Delete a schedule
- All Delete : Deletes the all schedules

deletion

Select items and click Delete button
If clicking delete button without item, previously selected item will be deleted from the latest time order.
Clicking All Delete makes all schedule deleted.

<warning>
When configuring time sector, previously configured time can not be included.

Event recording

Event recording is a recording via "sensor", "motion detection", and "text" input.
To perform event recording, frame rate and video quality per program need to be set at program settings. By default, event recording synchronizes with 3 recording modes, continuous recording, manual recording and schedule recording.
<reference>
If user wants to use Event recording only, please, set frame rate as 0fps and enter frame rate for Event recording.

Event applied time

To make event record user needs to setup record time for pre and post event. Event record range will be set based on time set by user.

Record time before event

User can select between 1~5sec and time ahead of event will be recorded as much as time set by user.

Record time after event

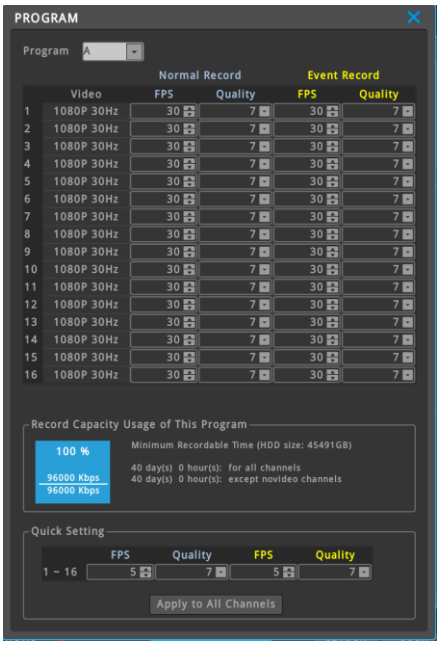
User can select between 1~30mins and time after event will be recorded as much as time set by user

program

menu → recording → program

Using [Program], adjust frame rate and quality configure recording program for Continuous, Manual, and Schedule recording.

Select Program to configure frame rate & resolution. For maximum performance, user can freely allocate the recording resource per channel. This feature enables the user to lower the recording performance of each channels and allocate the remaining resources to raise the recording performance of a specific channel or channels.



Program
There are 9 programs from A to I composing recording quality and resolution per channel.

Channels
Display the channel No.

video
displays entered video resolution and FRP.

Normal Record
Select frame rate per second and quality that are applied for normal video without events.

Event Record
Select frame rate per second and quality that are applied when event occurs. When event occurs DVR starts to record by the frame rate per second and quality of Event Record.

FPS
FPS (frames per second) users can select 1 to 30fps per second. Max. Frame can be changed according to the configuration.

Quality
This configures the recording quality. Value of Q can be configured between 1-10. The higher the number, the better recording quality is.

Record Capacity Usage
Displays the DVR recording quality.

Quick Setting
Apply the same setting for all channels at once.

<Notice>
Frame rate per second and quality cannot be set exceeding the specification of DVR. Please check the specification of DVR first before setting record.

Web Viewer

WebViewer is Web application program loaded to monitor real-time image or to monitor the images recorded through Web browser to PC located remotely.

System requirement

Items	Recommendation
CPU	Core i5 3.0GHz
Main Memory	4GB
Video Memory	512MB or higher
Display	1024MB PCI-E Graphic Card Support AGP Accelerate
BUS	Support PCI-E 16X or highter
Network	100/1000 Ethernet NIC
OS	Windows XP Professional(SP3 or higher) / Windows 7
Browser	Internet Explorer 8 or higher
Others	DirectX 9.0 or higher

installation

Webviewer Installer

Auto installation program is provided from login page to use Webviewer function. ActiveX installation is required to a PC which has first connection.

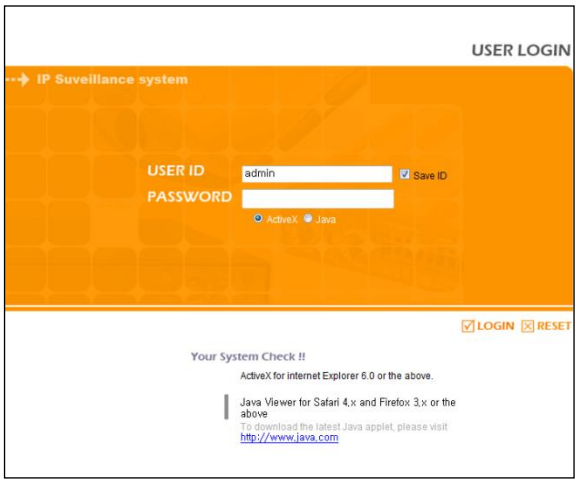
<caution>

Please close all programs related to Control Center while Webviewer Installer is being installed. Otherwise, it may affect the installation.

login

After inputting an IP address that is set to the system, the WebViewer Login page will be connected.
Examples of input method in address box are http://192.168.1.100 as IP address type or www.addresstest.com as domain address. In case of changing the port value besides default value 80, just input the changed port value.

Input the set of User ID & Password, click 'LOGIN' to access.
If password didn't change tin Control Center, ID and Password will be admin/12345.

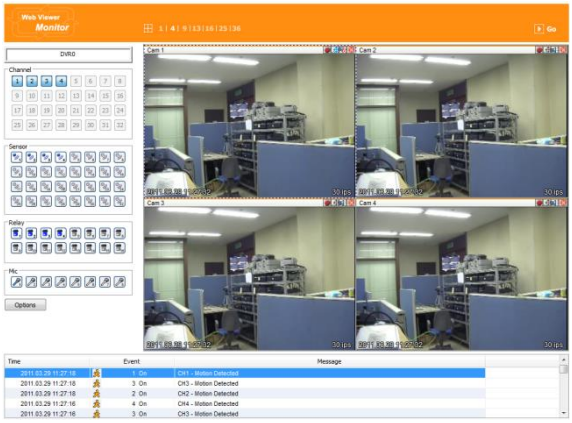


User set up

To access WebViewer, user authority and password can be changed in DVR or the account menu of Control Center configuration.

Monitor

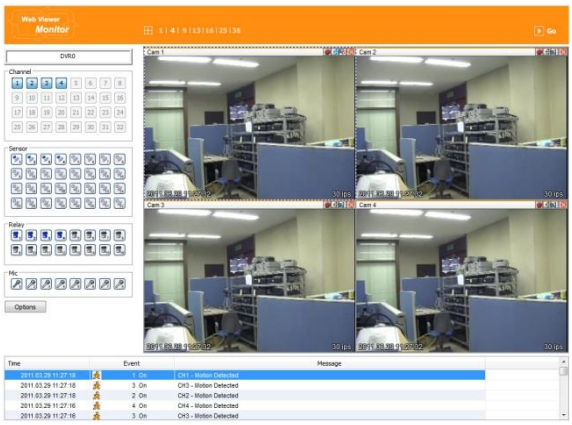
When it is authorized with User ID & Password input at Login page, it moves to monitor page. At Monitor page, monitor real time image of cameras connected to DVR, or it can control PTZ camera, Relay, and use Microphone function according to user's authorization.



screen division and changing video position

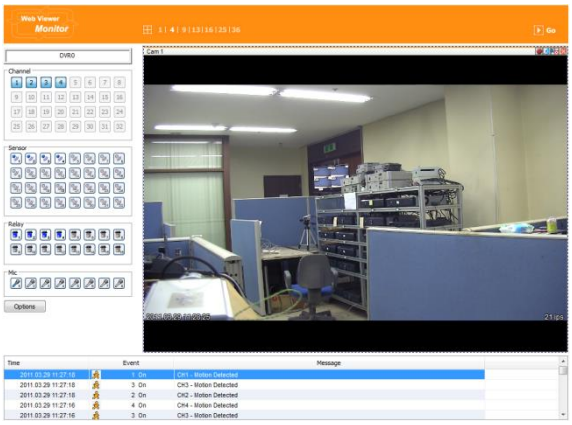
The first monitor page will display the maximum screens of the connected model.

It can to change to 1, 4, 9, 13, 16, 25, 36 divisions by clicking the number on top of page.
Also, it can change to 1 channel mode by click any one of channel image.



Double click on one of the playback screen to convert in 1 channel mode

1 After conversion to 1channel mode, double click on screen to return to previous division channels.



At division screen, it can change screen location using mouse drag
If Ch3 image moves to Ch1, drag Ch3 image and drop on Ch1 location so as to exchange between 3ch and 1ch image.

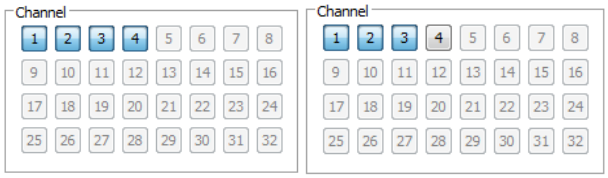
Press the very front icon on the upper screen on multi screen mode to switch to a full screen mode.
To go back to normal screen mode from full screen mode, press ESC key

Move to Playback

Click the Go on the upper right to move to playback page.

channel On/Off

It is On/Off button for the Channel located to left in page.
Click the channel wanted to On or Off.
And Default is "On".



Sensor indication

The icon indicates when sensor occurs in system

When it sensors, relevant sensor icon comes to Red, and indicates sensor number of video. When sensor is not triggered, icon keep as blue.

Relay operation

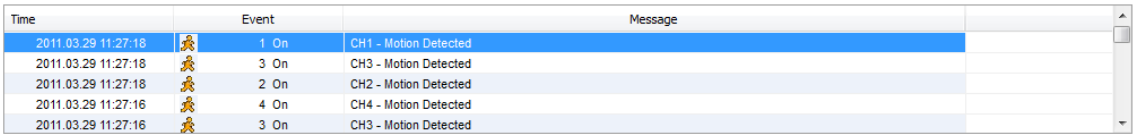
It can On or Off Relay of the unit. Click the number button to activate Relay On, then the icon Changes from Blue to orange color.

Not activated Relay button means, the product is no supported. Relay is need user's authority. Refer to user manual in the unit for the setup of User's authority of Relay.

Using microphone

Microphone can be set On or Off. Default is Off and it is changed from the projected type button to orange when click the button for the use Mic.

Event information



Time	Event	Message
2011.03.29 11:27:18	1 On	CH1 - Motion Detected
2011.03.29 11:27:18	3 On	CH3 - Motion Detected
2011.03.29 11:27:18	2 On	CH2 - Motion Detected
2011.03.29 11:27:16	4 On	CH4 - Motion Detected
2011.03.29 11:27:16	3 On	CH3 - Motion Detected

It shows real time event data occurred at the bottom of monitoring page.
Indicated Event data list are as follow

button	description
	Motion Detect On
,	Sensor Input
,	Relay Output On
,	No Video, Video Detected

video recording & save

video recording

Select by clicking "Rec Start" in right button of Mouse after selecting channel user wants to record during monitoring. It can record max. 10 minutes of video During Quick Recording, recording time is indicated on video.

If "Rec Stop" is pressed by clicking right mouse button, recroding stopped. Then, open the dialogue box to store recorded files. At this time, user can save it to the directory with any file name by user.

Saved recording file is saved into "*.re4" file format. re4 file can playback through Control Center Playback program or Mini Player program.

saving video

There are 3 types for saving Video - jpg, bmp, eye, saving means the function to record 1 frame of current monitoring channel.

To save video, select the channel and click right button of mouse. and select "Save As" and point out the location and press Save button.

Using PTZ

During monitoring, select a channel with PTZ configuration and right-click to select "PTZ" to use PTZ. PTZ control lets users use Pan/Tilt, Zoom/Focu functions.

Pan, Tilt control

There is a cross line in the middle and click image to operate Pan, Tilt. In the middle click Left/Right direction to control Pan, and Click Up/Down direction to control Tilt. The further it is clicked from the middle, the faster Pan/Tilt will operate.

Zoom, Focus control

Move mouse to the edge of left & right to see slide bar for Zoom, Focus.
The unit Area Zoom In available has Zoom Zero operating button. It can zoom in/out using slide bar at left of image, left slide bar can control Focus.

Move to Preset

In case of Preset set, Mouse on image press right button for pop-up menu and "Goto Preset" is indicated additionally. When select Preset list, it moves to Preset position selected. Preset should be set up by user in advance.

Activating Auxiliary

In case of Preset set, "Auxiliary" is indicated additionally, and it operates action when select registered menu.

<Reference>
Supported PTZ camera list can be refereed to (PTZ manipulation).

Using Audio

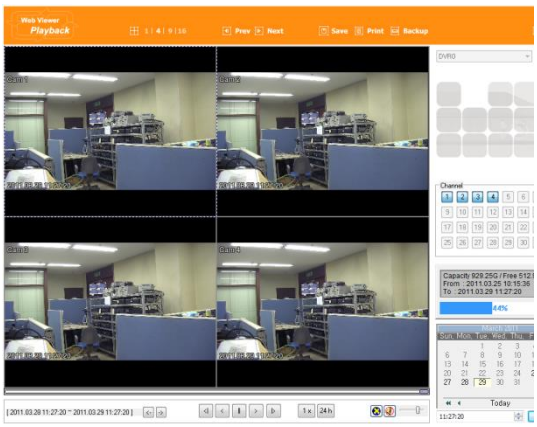
In case of Channel setup sync with Audio, press right mouse button on the image to activate pop-up menu to "Listen" and uncheck Mute. Audio Volue adjustment is available using slide bar.

Playback

This page is to playback recorded images, and user who has authority of 'HDD' among user ID or administrator can use this function.

Playback that is made up 16 divisions can play the images by searching through colander by recording period and moving the period. It can backup recorded image and also print Pause image or save to Bmp file.

Below are each title and function of Playback.



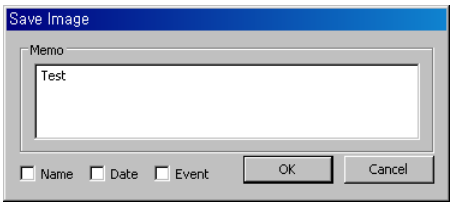
Video Division & Changing Channel

Playback supports 1, 4, 9,16 divisional screens. select division using menu on top of page as shown in the above picture.

Press the very front icon on the upper screen in multi-screen mode to switch to a full screen mode.
To back normal screen mode from full screen mode, press ESC key.

Save image

It can save playback image to BMP file.
Click mouse to channel to save. Dotted line will be surrounding to the selected channel, and click 'Save' button



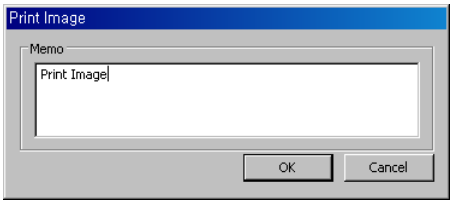
Save imamge dialog box appears, then it can input message or select channel name, date, event and data.

Press 'OK' to open dialog box for the saving location, then save

bmp file.

Print

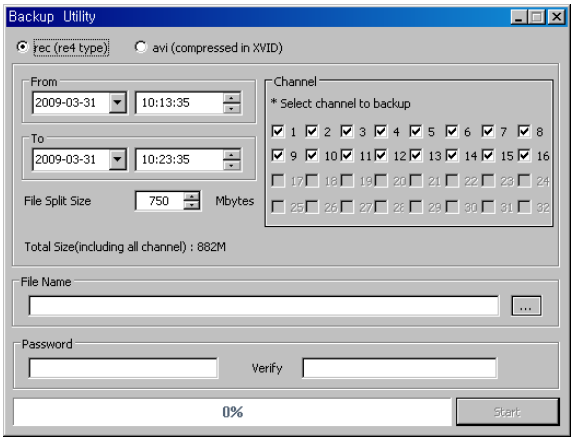
Select image with mouse for the channel to print image saved, and then click 'Print' button.



Window comes to input Memo, and click 'OK' button to print the image through the printer connected.
Print material includes 'Printing Date', 'Channel name', 'Recording Date' 'Event', 'Memo'.

Back up

There are re4 (Multi channel) and avi(single channel) Set From, To time and select the channel for backup
Point out the location for backup. Input in Password/Verify.
In case of playback backed up file, correct password should be input.

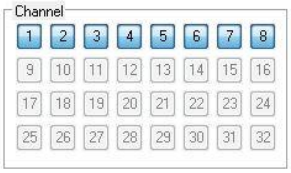


Move to Web Monitor

Click 'Go' button at top of page, and it can move Web monitor page.

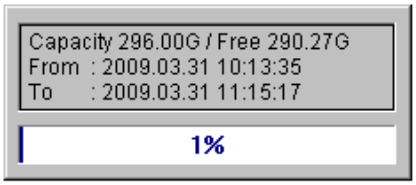
channel On/Off

same function as the Channel On/Off function at Web Monitor.
Located on the right, and click the wanted channel to "On" or "Off". All channels are On by Default.
Disabled Channel button means the product doesn't support it.



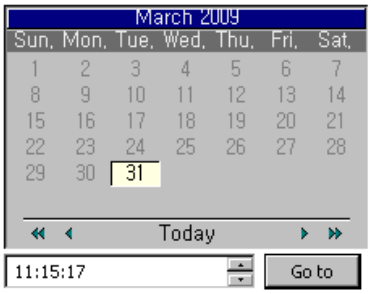
Saving time & Checking Record Capacity

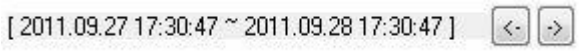
Displays the used and remaining space of HDD and the dates on which the first recording and last recording were done. It also shows in % how much space a user is using.



Calendar search

Recorded date is enabled in black color, and others unrecorded date disabled in grey. Click [Go to] button after select date & time so as to playback images on the date & time selected.





'When clicking the 'Go To' button, it indicates for 24hours from the time selected at left bottom. As above picture, it is possible to change the time zone with '24h' button.

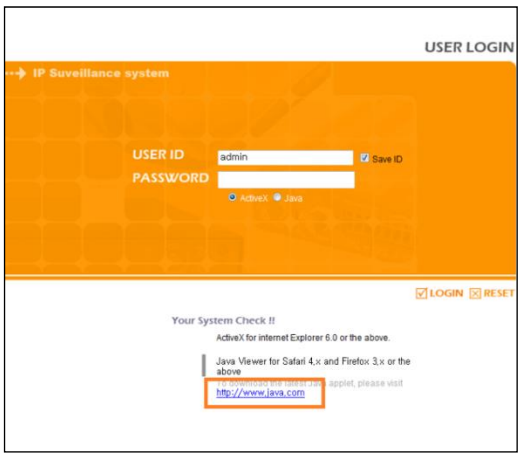
Function buttons on the bottom of an image

① Indicates playback range of recorded image.
② Press ←,→ button as the time set at (5) so as to change the time zone to playback in forwarding and reversing.
③ From left button, it can 'Move a frame back', 'Play backward', 'Stop', 'Play', 'Move a frame forward'.
④ It is the function to set play speed. After click the button, it can set the play speed '0.5x, 1x, 2x, 4x, 16x, 32x, 64x, and All'.
⑤ It is the function to set play area. After click the button, it can select play area '10min, 30min, 1hour, 3hour, 6hour, 12hour, 24hour'.
⑥ It can select DirectX use or not. If check DirectX mode, it can play image into Direct Draw based on graphic card and performance of PC.
⑦ It is the function to set audio play or not, and volume

JAVA Viewer

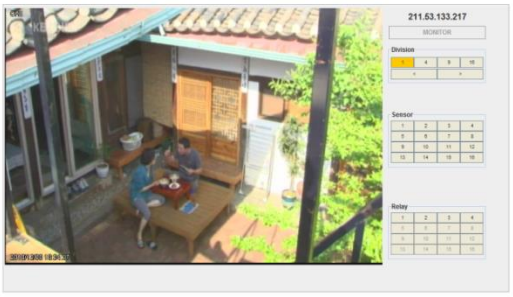
Java viewer, similar to Safari, Crome, Firefox, is a web viewer which lets users access to and monitor DVR on web-browsers which don't support ActiveX provided by Microsoft Internet Explorer.
Java should be installed in login screen to use Java viewer

After installing Java manually, input IP address and port on the browser then log in by clicking Java



After the login, single screen of video channel 1 is displayed.

Multi-screen display, Event, Relay can be used in Java viewer.
To change Multi screen display, click 1,4,9,16 in right side.



Webeye

Mobile viewer is an Application for Smart Phone. It is available to serach and install as free of charge with "WebEye" keyword in **Apple App store** & **Google Android Store**.

- ✓ Available to register up to 16 units
- ✓ Supports single/ 4 divisional monitoring mode.
- ✓ Supports multi-stream function
- ✓ Able to search system and event logs.
- ✓ Supports Digital Zoom, PTZ Control, Image saving, Image e-mail sending, etc. in Single Monitoring Mode.

Mobileviewer

This service allows users to view video by accessing to DVR from mobile device's web browser without certain applications. The device must support either wifi, 3G or Lte.

Input the form of http://IP/svc/mviewer.html to access to DVR from the web browser

appendix

problem solving [FAQ]

problem & symptom	solution
If system power isn't on, LED on the system front won't operate	✓ Check the power of system ✓ Check power voltage in out ✓ Check or replace power supply if power doesn't turn on after above procedure
No video on some channels with black screen	✓ Check the camera connected with relevant channel. Occasionally, the symptom may occur if camera video doesn't input correctly. ✓ Check if power is supplied to camera correctly. ✓ Occasionally, the symptom may occur with weak video signal from video distributor when the video is connected with variable systems. In this case, the symptom can be figured out/ solved connecting the camera directly to DVR.
No Video on Screen	✓ Check cable between DVR and camera ✓ When camera is connected to HD-SDI BNC input : Check if camera support HD-SDI output ✓ When HD-SDI BNC output is connected to Monitor BNC directly : Check if monitor support HD-SDI input ✓ When HD-SDI video is changed through DVI, VGA, etc. thru video converter : Check if video format of converter's HD-SDI input support s video format of this product.
REC LED doesn't turn on despite pressing [REC] button in front panel and No recording.	✓ Check if HDD space is secured to record ✓ Check if recording mode is set in menu
Only logo screen shows repeatedly	✓ Main board has a problem or SW is damaged. Please contact CS team for a further check.
Channel button doesn't work in live screen.	✓ If current screen is for event use, channel doesn't work. In this case, please terminate event screen pressing [ESC] and select channel.
Cursor doesn't move in Calendar Search.	✓ Check if marked at channel and date you want playback ✓ Both channel and date should be checked to start playback.
Alarm doesn't stop in spite of pressing [ESC] button to delete after an alarm is triggered.	✓ Please delete alarm pressing [MENU] in front panel as follows. 1) Withdrawing event monitoring screen : Monitoring mode – It turns off event monitoring time duration. 2) For alarm sound cancel : Event record mode - Alarm (Motion

	detection/Video loss) – It erases alarm output. 3) For event cancel : Event record mode - Alarm (Motion detection/Video loss) – It turn off mode.
No response in Live screen even [PTZ] button is pressed.	✓ Check if connected protocol and other configuration is set correctly for PTZ camera in Menu -> Network -> Remote Device.
External HDDs are not recognized as quantity installed physically after connecting multiple external HDDs to DVR.	✓ It takes time to be recognized multiple external HDDs. Try it again later. If same problem goes on, it is highly originated from HDD problem. Please try it with other HDD
Time re-setting is required" message comes out on the screen.	✓ This message comes out when there is time setup error on built-in clock. Please contact local dealer for further support .
"NONE" icon and error message pops up.	✓ Please check HDD connection status. Please contact local dealer if this message continues to pop up even if there is no problem in connection.
There is no added information of HDD after installing additional HDD.	✓ Please check if additional HDD is compatible with DVR. To know more about compatibility, please contact CS team of manufacturer.
There is no added information of external storage devices (USB memory, eSATA HDD)..	✓ Please check if additional storages are compatible with DVR. To know more about compatibility, please contact CS team of manufacturer.
Network setup using router is difficult.	✓ Please refer to product manual for details ✓ Please refer to UPnP section under "Network connection and setup" if a user is using router for network connection.
Lost password.	✓ Please contact CS team of manufacturer.
Copied data is not played in the PC.	✓ Please don't remove media during copy or don't turn off DVR. ✓ VFS4 (For DVD copy), exe copy is for customized player only so it can be played using MiniPlayer. ✓ Please install multi codec for playback data copied in avi format.
Can't return to live mode during playback.	✓ Press [□] or [live] button in front panel or remote control to return to live screen.
Recording is not working.	✓ Please check if camera input is well connected ✓ Please check record mode. ✓ Please check HDD is ready for record. ✓ Please check if current time is included in scheduled record time in case record mode is continuous or event. ✓ Please press [REC] button to start record. ✓ In case event record is not working please check event detection status.
Recorded picture quality is not good.	✓ Please set picture quality as Q7 for 1080p, Q5 for 720p. ✓ In case resolution and recording picture quality set high, data size

	will become high accordingly so HDD capacity will be reduced too. It will lead to short period time of recording
Remote control doesn't work.	✓ Point to remote control receiver ✓ Get new batteries.

compatible HDD

Please ask to seller for the HDD list compatible with DVR.

Factory default set-up values

System			
Date/time	Time		Current time
	Time zone		UTC 00:00 Dublin
	Daylight Saving Time (DST)		off
	Set Custom DST	type	Use Day of Week
		Start time	Jan / Last / Sun / 0:00
		End time	Feb / Last / Sun / 0:00
	Date Format		Month/Day/Year
	Sync With NTP	NTP Enable	Off
		NTP Mode	Client
		NTP Location	Public
		NTP Local	0.0.0.0
		Interval	1 hour
Disk	Disk manager		
	RAID manager		
	Overwrite		On
	Disk Full Alarm Warning		75%
	Block Playback		off / 5Day
	Delete Data		off
User Setup	User		admin
	Change ID & PW		
	Channel Rights		All Select
	Action Rights		All Select
	Auto login		Turn on / admin
Utility	DVR Alias		DVR0
	Language		English
	Keyboard sound		on
	DVR Keyboard ID		1
	Remote Controller ID		All
	System info		
	Save status		
	System log		
	Firmware upgrade		
	Configuration setting initialization		
	Import configuration		
	Export configuration		
Network			
Network	Type		Ethernet
	Automatic Addressing (DHCP)		Off

	IP Address		192.168.0.2
	Net Mask		255.255.255.0
	Gateway		192.168.0.1
	UPnP Port Forwarding		off
	DNS		4.2.2.1 / 0.0.0.0 / 0.0.0.0
	Port		80
	Bandwidth Limit (Mbps)		unlimited
xDSL	ID		Guest
	Password		********
	Status		xDSL is not connected
DDNS	activate		Turn off
	status		Not registered
	URL		mycam.to
	group		none
WRS	Enable		off
	Status		Not registered
	WNS (mycam.to)		On
	Custom DDNS		off
	Domain		None
Radius	Enable		Off
	IP Address		0.0.0.0
	Port		1812
Device			
Camera	status		turn on
	Name		Cam 1 ~ 16
PTZ	port		CoC
	device		C1080
	address		1
	baudrate		57600
keyboard	port		None
	device		WKC-100
	address		1
	Baudrate		9600
Etc	Auxiliary Enable		on
	Home time		off
	Parity bit		None
	Stop bit		1
	Data bit		8
Monitor	Edit "SEQ" key sequence	SEQ 1~16	Cam 1~6
		SEQ Rotation	1~4
	Interval		5 (Sec)
	Restore after Event popup		off
	Edit "MULTI" Key Sequence	SEQ Rotation	1~5
	Event Popup Enable		off / 3sec
Audio	Audio channel		channel 1 ~ 4
	Video channel		Channel 1 ~ 4
	Audio REC		off
	Audio Gain		0
	audio output channel		current singl-full video's audio
Text	Port		COM1
	Device		None
	Baudrate		2400
	Sync Video Channel		Cam1

	Recording		Off	
	Etc	Parity bit	none	
		Stop bit	1	
		Data bit	8	
	Manual	Header check	off	
		header 1	None	
		header 2	None	
		delimiter	0D0A	
		Time interval(ms)	1000	
		# of lines	20	
Evnet				
Event	activate		Turn on	
	Event check		always	
	Event synchronization	Relay 1	Turn on	
			Normal event source	turn off all
			system event source	Turn off all
			Duration period	10 seconds
		relay 2	Turn on	
			Normal event source	Turn off all
			system event source	Turn off all
			duration period	10seconds
		Relay 3	Turn on	
			normal event source	Turn off all
			system event source	Turn off all
			duration period	10seconds
		Relay 4	Turn on	
			normal event source	Turn off all
			system event source	Turn off all
			duration period	10seconds
		buzzer	Turn off	
			normal event source	Turn off all
			system event source	Turn off all
			duration period	10seconds
		Email	Turn off	
			normal event source	Turn off all
			system event source	Turn off all
			duration period	2mins
		FTP	Turn off	
			normal event source	Turn off all
			system event source	De-activate
			duration period	immediately
	E-mail configuration	sender address	receiver@gmail.com	
		Receiver address	Dvr1@dvr.com	
		attach	Turn off	
		SMTP address	SMTP_SERVER	
		SMTP ID	email._id	
		SMTP Password	*******	
		SMTP port	25	
		SMTP Auth	Not Use	
	FTP configuration	server IP/URL	FTP_SERVER	
		FTP channel	/	
		ID	ftp_user	
		Password	********	

Motion	channel		Cam1
	activate		Turn on
	Sensitivity		5
	Area		All Select
Sensor	activate		Turn on
	Sensor		Normal Open
Preset	Channel		Cam1
	Preset	S1~S16	None
		Motion	None
		Text	None
Record			
Record	Record Mode		Countinuous
	Program		A
	Pre Event Duration		1
	Post Event Duration		1
	Program	Program	A
		Normal FPS	30
		Normal Quality	7
		Event FPS	30
		Event Quality	7

* Varies between different models

Product specification

HD1600F-PDR

VIDEO INPUT	
Video input standard	SMPTE 292M (HD-SDI)
	DoubleReach™ support for 8 channels
Resolution / Frame Rate	SMPTE 274M (1080p, 1920x1080) : 25, 30, 29.97 FPS
	Input format auto detection
Connectors	16ch, 75Ω BNC connector
PoC	16ch, Power over Coax, Max. 16 W/ch, Total 180W
CoC	16ch, Control over Coax, Max. 57,600bps
VIDEO OUTPUT	
Video output	HDMI
	1, 4, 9, 10, 13, 16 split-screen
	User defined sequence / Alarm pop-up
	1920 x 1080p via HDMI port
RECORDING	
Compression	H.264 / JPEG
Resolution	1920 x 1080
Rate	400/480 fps at 1080p
Quality	1080p, 10 levels up to 12Mbps
Mode	Manual & Event / Schedule & Event / Continuous & Event
Schedule	24hrs / 7days
PLAYBACK	
Mode	Instant playback / search
Speed	Max. 400/480 fps at 1080p
Search type	Time, Calendar, Timeline, Event, Thumbnail, Smart, Text
Block playback	24hours ~ 99days
EVENT & ALARM	
Event source	MD(Motion Detection), Sensor, Text, Video Loss
Event check Schedule	24hrs / 7days
Event action	Buzzer, Relay, E-mail, FTP, Alarm pop-up
MD area	15 x 10
Sensor input	Dry contact (NO or NC selectable)
Text input	POS/ATM support, AVE VSI Pro/Hydra support
SYSTEM ALARM	
Alarm source	HDD fail, HDD almost full, Fan fail, Password fail, WRS fail
Alarm action	Warning message, Buzzer, E-mail, Relay
AUDIO	
Input/output	Input 4ch RCA / output HDMI, RCA
Compression	16KHz, 16bit sampling ADPCM
Direction	Both
PTZ	
Protocols	35 models including C1080, C1080PT-Z20, Pelco-D, Pelco-P, Samsung, Panasonic and others

NETWORK	
Interface	1 Gigabit Ethernet (10/100/1000Mbps)
Type	Static IP, Dynamic IP, xDSL
DDNS	WNS, DynDNS, NoIP, WRS
Bandwidth limit	Supported
NTP	Server / Client / Both
Users	10 Monitoring, 2 Playback
Streaming	1 HD, H.264 stream, Same as recording setting
	1 additional H.264 stream, nHD(640 x 360)
	1 JPEG stream, nHD(640 x 360) for e-mail or mobile
SECURITY	
User level	1 admin, 10 users
User privilege	Menu, PTZ, Relay, Playback, Power, Copy, Network MIC
IP filtering	Supported
STORAGE & BACKUP	
Storage devices	5 internal SATA HDDs, 1 external eSATA Interface, 1 Gigabit network for storage(NS0104R)
RAID Level	1/5/10 Supported
File system	Proprietary file system, Data-loss protection against power-failure
Capacity	Max. 16TB with eSATA, Max. 128TB with cascaded NS0104R
Backup type	Multi-channel or Single channel avi file
Backup device	USB drive (2 ports)
S.M.A.R.T.	Temperature and Health checking
SERIAL & I/O	
Serial port	1 RS-232C, 2 RS-485
Sensor input	16 Dry-contacts
Relay output	4 Relays
CONTROLLER	
Device	Front panel, IR remote, Joystick Keyboard, Mouse
SOFTWARE	
Web viewer	Monitoring / Event / PTZ / Playback with IE
Java viewer	Monitoring / Event / PTZ with IE, Chrome, Safari
Mobile viewer	Monitoring / PTZ / LogView with iPhone & Android
CMS	Control Center Standard, Max. 1024 DVRs
SDK	ActiveX(COM) SDK
ENVIRONMENTAL & PHYSICAL	
Dimension	445(W) x 418(D) x 88(H) mm
Weight	10 Kg (No HDD)
Operating Temperature	5°C~45°C (41°F ~ 113°F)
Power	AC free volt (100 ~ 240VAC), 50/60Hz
PoC Power	DC 24V/7.5A (Option)
Power Consumption	Max. 100W Typical 70W(1 HDD)
Approval	KC, FCC, CE, RoHS, HDcctv(TBD)

HD1600F-R

VIDEO INPUT	
Video input standard	SMPTE 292M (HD-SDI)
Resolution / Framerate	SMPTE 274M (1080p, 1920x1080) : 25, 30, 29.97 FPS Input format auto detection
Connectors	16ch, 75Ω BNC connector
VIDEO OUTPUT	
Video output	HDMI 1, 4, 9, 10, 13, 16 split-screen User defined sequence / Alarm pop-up 1920 x 1080p via HDMI port
RECORDING	
Compression	H.264 / JPEG
Resolution	1920 x 1080
Rate	400/480 fps at 1080p
Quality	1080p, 10 levels up to 12Mbps
Mode	Manual & Event / Schedule & Event / Continuous & Event
Schedule	24hrs / 7days
PLAYBACK	
Mode	Instant playback / search
Speed	Max. 400/480 fps at 1080p
Search type	Time, Calendar, Timeline, Event, Thumbnail, Smart, Text
Block playback	24hours ~ 99days
EVENT & ALARM	
Event source	MD(Motion Detection), Sensor, Text, Video Loss
Event check Schedule	24hrs / 7days
Event action	Buzzer, Relay, E-mail, FTP, Alarm pop-up
MD area	15 x 10
Sensor input	Dry contact (NO or NC selectable)
Text input	POS/ATM support, AVE VSI Pro/Hydra support
SYSTEM ALARM	
Alarm source	HDD fail, HDD almost full, Fan fail, Password fail, WRS fail
Alarm action	Warning message, Buzzer, E-mail, Relay
AUDIO	
Input/output	Input 4ch RCA / output HDMI, RCA
Compression	16KHz, 16bit sampling ADPCM
Direction	Both
PTZ	
Protocols	35 models including C1080, C1080PT-Z20, Pelco-D, Pelco-P, Samsung, Panasonic and others

NETWORK	
Interface	1 Gigabit Ethernet (10/100/1000Mbps)
Type	Static IP, Dynamic IP, xDSL
DDNS	WNS, DynDNS, NoIP, WRS
Bandwidth limit	Supported
NTP	Server / Client / Both
Users	10 Monitoring, 2 Playback
Streaming	1 HD, H.264 stream, Same as recording setting 1 additional H.264 stream, nHD(640 x 360) 1 JPEG stream, nHD(640 x 360) for e-mail or mobile
SECURITY	
User level	1 admin, 10 users
User privilege	Menu, PTZ, Relay, Playback, Power, Copy, Network MIC
IP filtering	Supported
STORAGE & BACKUP	
Storage devices	5 internal SATA HDDs, 1 external eSATA Interface, 1 Gigabit network for storage(NS0104R)
RAID Level	1/5/10 Supported
File system	Proprietary file system, Data-loss protection against power-failure
Capacity	Max. 16TB with eSATA, Max. 128TB with cascaded NS0104R
Backup type	Multi-channel or Single channel avi file
Backup device	USB drive (2 ports)
S.M.A.R.T.	Temperature and Health checking
SERIAL & I/O	
Serial port	1 RS-232C, 2 RS-485
Sensor input	16 Dry-contacts
Relay output	4 Relays
CONTROLLER	
Device	Front panel, IR remote, Joystick Keyboard, Mouse
SOFTWARE	
Web viewer	Monitoring / Event / PTZ / Playback with IE
Java viewer	Monitoring / Event / PTZ with IE, Chrome, Safari
Mobile viewer	Monitoring / PTZ / LogView with iPhone & Android
CMS	Control Center Standard, Max. 1024 DVRs
SDK	ActiveX(COM) SDK
ENVIRONMENTAL & PHYSICAL	
Dimension	445(W) x 418(D) x 88(H) mm
Weight	10 Kg (No HDD)
Operating Temperature	5°C~45°C (41°F ~ 113°F)
Power	AC free volt (100 ~ 240VAC), 50/60Hz
Power Consumption	Max. 100W Typical 70W(1 HDD)
Approval	KC, FCC, CE, RoHS, HDcctv(TBD)

HD1600F

VIDEO INPUT	
Video input standard	SMPTE 292M (HD-SDI)
Resolution / Framerate	SMPTE 274M (1080p, 1920x1080) : 25, 30, 29.97 FPS
	Input format auto detection
Connectors	16ch, 75Ω BNC connector
VIDEO OUTPUT	
Video output	HDMI
	1, 4, 9, 10, 13, 16 split-screen
	User defined sequence / Alarm pop-up
	1920 x 1080p via HDMI port
RECORDING	
Compression	H.264 / JPEG
Resolution	1920 x 1080
Rate	480/400 fps at 1080p
Quality	1080p, 10 levels up to 12Mbps
Mode	Manual & Event / Schedule & Event / Continuous & Event
Schedule	24hrs / 7days
PLAYBACK	
Mode	Instant playback / search
Speed	Max. 480/400 fps at 1080p
Search type	Time, Calendar, Timeline, Event, Thumbnail, Smart, Text
Block playback	24hours ~ 99days
EVENT & ALARM	
Event source	MD(Motion Detection), Sensor, Text, Video Loss
Event check Schedule	24hrs / 7days
Event action	Buzzer, Relay, E-mail, FTP, Alarm pop-up
MD area	15 x 10
Sensor input	Dry contact (NO or NC selectable)
Text input	POS/ATM support, AVE VSI Pro/Hydra support
SYSTEM ALARM	
Alarm source	HDD fail, HDD almost full, Fan fail, Password fail, WRS fail
Alarm action	Warning message, Buzzer, E-mail, Relay
AUDIO	
Input/output	Input 4ch RCA / output HDMI, RCA
Compression	16KHz, 16bit sampling ADPCM
Direction	Both
PTZ	
Protocols	35 models including C1080, C1080PT-Z20, Pelco-D, Pelco-P, Samsung, Panasonic and others

NETWORK	
Interface	1 Gigabit Ethernet (10/100/1000Mbps)
Type	Static IP, Dynamic IP, xDSL
DDNS	WNS, DynDNS, NoIP, WRS
Bandwidth limit	Supported
NTP	Server / Client / Both
Users	10 Monitoring, 2 Playback
Streaming	1 HD, H.264 stream, Same as recording setting
	1 additional H.264 stream, nHD(640 x 360)
	1 JPEG stream, nHD(640 x 360) for e-mail or mobile
SECURITY	
User level	1 admin, 10 users
User privilege	Menu, PTZ, Relay, Playback, Power, Copy, Network MIC
IP filtering	Supported
STORAGE & BACKUP	
Storage devices	5 internal SATA HDDs, 1 external eSATA Interface, 1 Gigabit network for storage(NS04R)
File system	Proprietary file system, Data-loss protection against power-failure
Capacity	Max. 32TB with eSATA, Max. 128TB with cascaded NS04R
Backup type	Multi-channel or Single channel avi file
Backup device	USB drive (2 ports)
S.M.A.R.T.	Temperature and Health checking
SERIAL & I/O	
Serial port	1 RS-232C, 2 RS-485
Sensor input	16 Dry-contacts
Relay output	4 Relays
CONTROLLER	
Device	Front panel, IR remote, Joystick Keyboard, Mouse
SOFTWARE	
Web viewer	Monitoring / Event / PTZ / Playback with IE
Java viewer	Monitoring / Event / PTZ with IE, Chrome, Safari
Mobile viewer	Monitoring / PTZ / LogView with iPhone & Android
CMS	Control Center Standard, Max. 1024 DVRs
SDK	ActiveX(COM) SDK
ENVIRONMENTAL & PHYSICAL	
Dimension	445(W) x 418(D) x 88(H) mm
Weight	10 Kg (No HDD)
Operating Temperature	5°C~45°C (41°F ~ 113°F)
Power	AC free volt (100 ~ 240VAC), 50/60Hz
Power Consumption	Max. 100W Typical 70W(1 HDD)
Approval	KC, FCC, CE, RoHS, HDcctv

HD1600M-PDR

VIDEO INPUT	
Video input standard	SMPTE 292M (HD-SDI)
	Odd channels support DoubleReach™ (Total 8 channels)
Resolution / Frame Rate	SMPTE 274M (1080p, 1920x1080) : 25, 30, 29.97 FPS
	Input format auto detection
Connectors	16ch, 75Ω BNC connector
PoC	16ch, Power over Coax, Max. 16 W/ch, Total 180W
CoC	16ch, Control over Coax, Max. 57,600bps

VIDEO OUTPUT	
Video output	HDMI
	1, 4, 9, 10, 13, 16 split-screen
	User defined sequence / Alarm pop-up
	1920 x 1080p via HDMI port

RECORDING	
Compression	H.264 / JPEG
Resolution	1920 x 1080
Rate	120/100 fps at 1080p
Quality	1080p, 10 levels up to 12Mbps
Mode	Manual & Event / Schedule & Event / Continuous & Event
Schedule	24hrs / 7days

PLAYBACK	
Mode	Instant playback / search
Speed	Max. 120/100 fps at 1080p
Search type	Time, Calendar, Timeline, Event, Thumbnail, Smart, Text
Block playback	24hours ~ 99days

EVENT & ALARM	
Event source	MD(Motion Detection), Sensor, Text, Video Loss
Event check Schedule	24hrs / 7days
Event action	Buzzer, Relay, E-mail, FTP, Alarm pop-up
MD area	15 x 10
Sensor input	Dry contact (NO or NC selectable)
Text input	POS/ATM support, AVE VSI Pro/Hydra support

SYSTEM ALARM	
Alarm source	HDD fail, HDD almost full, Fan fail, Password fail, WRS fail
Alarm action	Warning message, Buzzer, E-mail, Relay

AUDIO	
Input/output	Input 4ch RCA / output HDMI, RCA
Compression	16KHz, 16bit sampling ADPCM
Direction	Both

PTZ	
Protocols	35 models including C1080, C1080PT-Z20, Pelco-D, Pelco-P, Samsung, Panasonic and others

NETWORK	
Interface	1 Gigabit Ethernet (10/100/1000Mbps)
Type	Static IP, Dynamic IP, xDSL
DDNS	WNS, DynDNS, NoIP, WRS
Bandwidth limit	Supported
NTP	Server / Client / Both
Users	10 Monitoring, 2 Playback
Streaming	1 HD, H.264 stream, Same as recording setting
	1 additional H.264 stream, nHD(640 x 360)
	1 JPEG stream, nHD(640 x 360) for e-mail or mobile

SECURITY	
User level	1 admin, 10 users
User privilege	Menu, PTZ, Relay, Playback, Power, Copy, Network MIC
IP filtering	Supported

STORAGE & BACKUP	
Storage devices	5 internal SATA HDDs, 1 external eSATA Interface, 1 Gigabit network for storage(NS04R)
RAID Level	1/5/10 Supported
File system	Proprietary file system, Data-loss protection against power-failure
Capacity	Max. 32TB with eSATA, Max. 128TB with cascaded NS04R
Backup type	Multi-channel or Single channel avi file
Backup device	USB drive (2 ports)
S.M.A.R.T.	Temperature and Health checking

SERIAL & I/O	
Serial port	1 RS-232C, 2 RS-485
Sensor input	16 Dry-contacts
Relay output	4 Relays

CONTROLLER	
Device	Front panel, IR remote, Joystick Keyboard, Mouse

SOFTWARE	
Web viewer	Monitoring / Event / PTZ / Playback with IE
Java viewer	Monitoring / Event / PTZ with IE, Chrome, Safari
Mobile viewer	Monitoring / PTZ / LogView with iPhone & Android
CMS	Control Center Standard, Max. 1024 DVRs
SDK	ActiveX(COM) SDK

ENVIRONMENTAL & PHYSICAL	
Dimension	445(W) x 418(D) x 88(H) mm
Weight	10 Kg (No HDD)
Operating Temperature	5°C~45°C (41°F ~ 113°F)
Power	AC free volt (100 ~ 240VAC), 50/60Hz
PoC Power	DC 24V/7.5A (Option)
Power Consumption	Max. 100W Typical 70W(1 HDD)
Approval	KC, FCC, CE, RoHS, HDcctv

HDC1601M

VIDEO INPUT	
Video input standard	SMPTE 292M (HD-SDI)
Resolution / Frame Rate	SMPTE 274M(1080p, 1920x1080) : 25, 30, 29.97 fps Input format auto detection
Connectors	16ch, 75Ω BNC connector
VIDEO OUTPUT	
Video output	HDMI 1, 4, 9, 10, 13, 16 split-screen User defined sequence / Alarm pop-up 1920 x 1080p via HDMI port
RECORDING	
Compression	H.264 / JPEG
Resolution	1920 x 1080
Rate	100fps/120fps at 1080p
Quality	1080p, 10 levels up to 12Mbps
Mode	Time, Calendar, Timeline, Event, Thumbnail, Smart, Text
Schedule	24hrs / 7days
PLAYBACK	
Mode	Instant playback / search
Speed	Max. 100fps/120fps at 1080p
Search type	Time, Calendar, Event, Thumbnail, Smart, Text
Block playback	24hours ~ 99days
EVENT & ALARM	
Event source	MD(Motion Detection), Sensor, Text, Video Loss
Event check schedule	24hrs / 7days
Event action	Buzzer, Relay, E-mail, FTP, Alarm pop-up
MD area	15 x 10
Sensor input	Dry contact (NO or NC selectable)
Text input	POS/ATM support, AVE VSI Pro/Hydra support
SYSTEM ALARM	
Alarm source	HDD fail, HDD almost full, Password fail, WRS fail
Alarm action	Warning message, Buzzer, E-mail, Relay
AUDIO	
Input/output	Input 4ch RCA / output HDMI, RCA
Compression	16KHz, 16bit sampling ADPCM
Direction	Both
PTZ	
Protocols	35 models including C1080, C1080PT-Z20, Pelco-D, Pelco-P, Samsung, Panasonic and others

NETWORK	
Interface	1 Gigabit Ethernet (10/100/1000Mbps)
Type	Static IP, Dynamic IP, xDSL
DDNS	WNS, DynDNS, NoIP, WRS
Bandwidth limit	Supported
NTP	Server / Client / Both
Users	10 monitoring, 2 playback
Streaming	1 HD, H.264 stream, Same as recording setting 1 additional H.264 stream, nHD(640 x 360) 1 JPEG stream, nHD(640 x 360) for e-mail or mobile
SECURITY	
User level	1 admin, 10 users
User privilege	Menu, PTZ, Relay, Playback, Power, Copy, Network MIC
IP filtering	Supported
STORAGE & BACKUP	
Storage devices	2 internal SATA HDDs, , 1 external eSATA Interface
File system	Proprietary file system, Data-loss protection against power-failure
Capacity	Max. 16TB with eSATA
Backup type	Multi-channel or Single channel avi file
Backup device	USB drive (2 ports)
S.M.A.R.T.	Temperature and Health checking
SEIRAL & I/O	
Serial port	1 RS-232C, 2 RS-485
Sensor input	16 Dry-contacts
Relay output	2 Relays
CONTROLLER	
Device	Front panel, IR remote, Joystick Keyboard, Mouse
SOFTWARE	
Web viewer	Monitoring / Event / PTZ / Playback with IE
Java viewer	Monitoring / Event/ PTZ with IE, Chrome, Safari
Mobile viewer	Monitoring / PTZ /LogView with iPhone & Android
CMS	Control Center Standard, Max. 1024 DVRs
SDK	ActiveX(COM) SDK
ENVIRONMENTAL & PHYSICAL	
Dimension	350(W) x 393(D) x 88(H) mm
Weight	8 Kg (No HDD)
Operating Temperature	5°C~45°C (41°F ~ 113°F)
Power	AC free volt (100 ~ 240VAC), 50/60Hz
Power consumption	Max. 40W Typical 30W
Approval	KC, FCC, CE, RoHS, HDcctv(TBD)

HD800F-PDR

VIDEO INPUT	
Video input standard	SMPTE 292M (HD-SDI)
	Odd channels support DoubleReach™ (Total 4 channels)
Resolution / Frame Rate	SMPTE 274M (1080p, 1920x1080) : 25, 30, 29.97 FPS
	Input format auto detection
Connectors	8ch, 75Ω BNC connector
PoC	8ch, Power over Coax, Max. 16 W/ch, Total 120W
CoC	8ch, Control over Coax, Max. 57,600bps

VIDEO OUTPUT	
Video output	HDMI
	1, 4, 8 split-screen
	User defined sequence / Alarm pop-up
	1920 x 1080p via HDMI port

RECORDING	
Compression	H.264 / JPEG
Resolution	1920 x 1080
Rate	240/200 fps at 1080p
Quality	1080p, 10 levels up to 12Mbps
Mode	Manual & Event / Schedule & Event / Continuous & Event
Schedule	24hrs / 7days

PLAYBACK	
Mode	Instant playback / search
Speed	Max. 240/200 fps at 1080p
Search type	Time, Calendar, Timeline, Event, Thumbnail, Smart, Text
Block playback	24hours ~ 99days

EVENT & ALARM	
Event source	MD(Motion Detection), Sensor, Text, Video Loss
Event check Schedule	24hrs / 7days
Event action	Buzzer, Relay, E-mail, FTP, Alarm pop-up
MD area	15 x 10
Sensor input	Dry contact (NO or NC selectable)
Text input	POS/ATM support, AVE VSI Pro/Hydra support

SYSTEM ALARM	
Alarm source	HDD fail, HDD almost full, Fan fail, Password fail, WRS fail
Alarm action	Warning message, Buzzer, E-mail, Relay

AUDIO	
Input/output	Input 4ch RCA / output HDMI, RCA
Compression	16KHz, 16bit sampling ADPCM
Direction	Both

PTZ	
Protocols	35 models including C1080, C1080PT-Z20, Pelco-D, Pelco-P, Samsung, Panasonic and others

NETWORK	
Interface	1 Gigabit Ethernet (10/100/1000Mbps)
Type	Static IP, Dynamic IP, xDSL
DDNS	WNS, DynDNS, NoIP, WRS
Bandwidth limit	Supported
NTP	Server / Client / Both
Users	10 Monitoring, 2 Playback
Streaming	1 HD, H.264 stream, Same as recording setting
	1 additional H.264 stream, nHD(640 x 360)
	1 JPEG stream, nHD(640 x 360) for e-mail or mobile

SECURITY	
User level	1 admin, 10 users
User privilege	Menu, PTZ, Relay, Playback, Power, Copy, Network MIC
IP filtering	Supported

STORAGE & BACKUP	
Storage devices	5 internal SATA HDDs, 1 external eSATA Interface,
RAID Level	1/5/10 Supported
File system	Proprietary file system, Data-loss protection against power-failure
Capacity	Max. 32TB with eSATA
Backup type	Multi-channel or Single channel avi file
Backup device	USB drive (2 ports)
S.M.A.R.T.	Temperature and Health checking

SERIAL & I/O	
Serial port	1 RS-232C, 2 RS-485
Sensor input	8 Dry-contacts
Relay output	4 Relays

CONTROLLER	
Device	Front panel, IR remote, Joystick Keyboard, Mouse

SOFTWARE	
Web viewer	Monitoring / Event / PTZ / Playback with IE
Java viewer	Monitoring / Event / PTZ with IE, Chrome, Safari
Mobile viewer	Monitoring / PTZ / LogView with iPhone & Android
CMS	Control Center Standard, Max. 1024 DVRs
SDK	ActiveX(COM) SDK

ENVIRONMENTAL & PHYSICAL	
Dimension	445(W) x 418(D) x 88(H) mm
Weight	10 Kg (No HDD)
Operating Temperature	5°C~45°C (41°F ~ 113°F)
Power	AC free volt (100 ~ 240VAC), 50/60Hz
PoC Power	DC 24V / 5A (Option)
Power Consumption	Max. 100W Typical 70W(1 HDD)
Approval	KC, FCC, CE, RoHS, HDcctv

HD800F-R

VIDEO INPUT	
Video input standard	SMPTE 292M (HD-SDI)
Resolution / Frame Rate	SMPTE 274M (1080p, 1920x1080) : 25, 30, 29.97 FPS Input format auto detection
Connectors	8ch, 75Ω BNC connector

VIDEO OUTPUT	
Video output	HDMI
	1, 4, 8 split-screen
	User defined sequence / Alarm pop-up
	1920 x 1080p via HDMI port

RECORDING	
Compression	H.264 / JPEG
Resolution	1920 x 1080
Rate	240/200 fps at 1080p
Quality	1080p, 10 levels up to 12Mbps
Mode	Manual & Event / Schedule & Event / Continuous & Event
Schedule	24hrs / 7days

PLAYBACK	
Mode	Instant playback / search
Speed	Max. 240/200 fps at 1080p
Search type	Time, Calendar, Timeline, Event, Thumbnail, Smart, Text
Block playback	24hours ~ 99days

EVENT & ALARM	
Event source	MD(Motion Detection), Sensor, Text, Video Loss
Event check Schedule	24hrs / 7days
Event action	Buzzer, Relay, E-mail, FTP, Alarm pop-up
MD area	15 x 10
Sensor input	Dry contact (NO or NC selectable)
Text input	POS/ATM support, AVE VSI Pro/Hydra support

SYSTEM ALARM	
Alarm source	HDD fail, HDD almost full, Fan fail, Password fail, WRS fail
Alarm action	Warning message, Buzzer, E-mail, Relay

AUDIO	
Input/output	Input 4ch RCA / output HDMI, RCA
Compression	16KHz, 16bit sampling ADPCM
Direction	Both

PTZ	
Protocols	35 models including C1080, C1080PT-Z20, Pelco-D, Pelco-P, Samsung, Panasonic and others

NETWORK	
Interface	1 Gigabit Ethernet (10/100/1000Mbps)
Type	Static IP, Dynamic IP, xDSL
DDNS	WNS, DynDNS, NoIP, WRS
Bandwidth limit	Supported
NTP	Server / Client / Both
Users	10 Monitoring, 2 Playback
Streaming	1 HD, H.264 stream, Same as recording setting
	1 additional H.264 stream, nHD(640 x 360)
	1 JPEG stream, nHD(640 x 360) for e-mail or mobile

SECURITY	
User level	1 admin, 10 users
User privilege	Menu, PTZ, Relay, Playback, Power, Copy, Network MIC
IP filtering	Supported

STORAGE & BACKUP	
Storage devices	5 internal SATA HDDs, 1 external eSATA Interface,
RAID Level	1/5/10 Supported
File system	Proprietary file system, Data-loss protection against power-failure
Capacity	Max. 32TB with eSATA
Backup type	Multi-channel or Single channel avi file
Backup device	USB drive (2 ports)
S.M.A.R.T.	Temperature and Health checking

SERIAL & I/O	
Serial port	1 RS-232C, 2 RS-485
Sensor input	8 Dry-contacts
Relay output	4 Relays

CONTROLLER	
Device	Front panel, IR remote, Joystick Keyboard, Mouse

SOFTWARE	
Web viewer	Monitoring / Event / PTZ / Playback with IE
Java viewer	Monitoring / Event / PTZ with IE, Chrome, Safari
Mobile viewer	Monitoring / PTZ / LogView with iPhone & Android
CMS	Control Center Standard, Max. 1024 DVRs
SDK	ActiveX(COM) SDK

ENVIRONMENTAL & PHYSICAL	
Dimension	445(W) x 418(D) x 88(H) mm
Weight	10 Kg (No HDD)
Operating Temperature	5°C~45°C (41°F ~ 113°F)
Power	AC free volt (100 ~ 240VAC), 50/60Hz
Power Consumption	Max. 100W Typical 70W(1 HDD)
Approval	KC, FCC, CE, RoHS, HDcctv

HDC801F-PD

VIDEO INPUT	
Video input standard	SMPTE 292M (HD-SDI) DoubleReach™ support for 4 channels
Resolution / Framerate	SMPTE 274M(1080p, 1920x1080) : 25, 30, 29.97 fps Input format auto detection
Connectors	8ch, 75Ω BNC connector
PoC	8ch, Power over Coax, Max. 16 W/ch, Total 120W
CoC	8ch, Control over Coax, Max. 57,600bps
VIDEO OUTPUT	
Video output	HDMI 1, 4, 8 split-screen User defined sequence / Alarm pop-up 1920 x 1080p via HDMI port
RECORDING	
Compression	H.264 / JPEG
Resolution	1920 x 1080
Rate	200fps/240fps at 1080p
Quality	1080p, 10 levels up to 12Mbps
Mode	Manual & Event / Schedule & Event / Continuous & Event
Schedule	24hrs / 7days
PLAYBACK	
Mode	Instant playback / search
Speed	Max. 200fps/240fps at 1080p
Search type	Time, Calendar, Timeline, Event, Thumbnail, Smart, Text
Block playback	24hours ~ 99days
EVENT & ALARM	
Event source	MD(Motion Detection), Sensor, Text, Video Loss
Event check schedule	24hrs / 7days
Event action	Buzzer, Relay, E-mail, FTP, Alarm pop-up
MD area	15 x 10
Sensor input	Dry contact (NO or NC selectable)
Text input	POS/ATM support, AVE VSI Pro/Hydra support
SYSTEM ALARM	
Alarm source	HDD fail, HDD almost full, Password fail, WRS fail
Alarm action	Warning message, Buzzer, E-mail, Relay
AUDIO	
Input/output	Input 4ch RCA / output HDMI, RCA
Compression	16KHz, 16bit sampling ADPCM
Direction	Both
PTZ	
Protocols	35 models including C1080, C1080PT-Z20, Pelco-D, Pelco-P, Samsung, Panasonic and others

NETWORK	
Interface	1 Gigabit Ethernet (10/100/1000Mbps)
Type	Static IP, Dynamic IP, xDSL
DDNS	WNS, DynDNS, NoIP, WRS
Bandwidth limit	Supported
NTP	Server / Client / Both
Users	10 monitoring, 2 playback
Streaming	1 HD, H.264 stream, Same as recording setting 1 additional H.264 stream, nHD(640 x 360) 1 JPEG stream, nHD(640 x 360) for e-mail or mobile
SECURITY	
User level	1 admin, 10 users
User privilege	Menu, PTZ, Relay, Playback, Power, Copy, Network MIC
IP filtering	Supported
STORAGE & BACKUP	
Storage devices	2 internal SATA HDDs, 1 external eSATA Interface
File system	Proprietary file system, Data-loss protection against power-failure
Capacity	Max. 16TB with eSATA
Backup type	Multi-channel or Single channel avi file
Backup device	USB drive (2 ports)
S.M.A.R.T.	Temperature and Health checking
SEIRAL & I/O	
Serial port	1 RS-232C, 2 RS-485
Sensor input	8 Dry-contacts
Relay output	2 Relays
CONTROLLER	
Device	Front panel, IR remote, Joystick Keyboard, Mouse
SOFTWARE	
Web viewer	Monitoring / Event / PTZ / Playback with IE
Java viewer	Monitoring / Event/ PTZ with IE, Chrome, Safari
Mobile viewer	Monitoring / PTZ / LogView with iPhone & Android
CMS	Control Center Standard, Max. 1024 DVRs
SDK	ActiveX(COM) SDK
ENVIRONMENTAL & PHYSICAL	
Dimension	350(W) x 393(D) x 88(H) mm
Weight	8 Kg (No HDD)
Operating Temperature	5°C~45°C (41°F ~ 113°F)
Power	AC free volt (100 ~ 240VAC), 50/60Hz
PoC Power	DC 24V/5A (Option)
Power consumption	Max. 40W Typical 30W
Approval	KC, FCC, CE, RoHS, HDcctv(TBD)

HDC801F

VIDEO INPUT	
Video input standard	SMPTE 292M (HD-SDI)
Resolution / Framerate	SMPTE 274M(1080p, 1920x1080) : 25, 30, 29.97 fps Input format auto detection
Connectors	8ch, 75Ω BNC connector

VIDEO OUTPUT	
Video output	HDMI
	1, 4, 8 split-screen
	User defined sequence / Alarm pop-up
	1920 x 1080p via HDMI port

RECORDING	
Compression	H.264 / JPEG
Resolution	1920 x 1080
Rate	240/200fps at 1080p
Quality	1080p, 10 levels up to 12Mbps
Mode	Manual & Event / Schedule & Event / Continuous & Event
Schedule	24hrs / 7days

PLAYBACK	
Mode	Instant playback / search
Speed	Max. 240/200fps at 1080p
Search type	Time, Calendar, Timeline, Event, Thumbnail, Smart, Text
Block playback	24hours ~ 99days

EVENT & ALARM	
Event source	MD(Motion Detection), Sensor, Text, Video Loss
Event check schedule	24hrs / 7days
Event action	Buzzer, Relay, E-mail, FTP, Alarm pop-up
MD area	15 x 10
Sensor input	Dry contact (NO or NC selectable)
Text input	POS/ATM support, AVE VSI Pro/Hydra support

SYSTEM ALARM	
Alarm source	HDD fail, HDD almost full, Password fail, WRS fail
Alarm action	Warning message, Buzzer, E-mail, Relay

AUDIO	
Input/output	Input 4ch RCA / output HDMI, RCA
Compression	16KHz, 16bit sampling ADPCM
Direction	Both

PTZ	
Protocols	35 models including C1080, C1080PT-Z20, Pelco-D, Pelco-P, Samsung, Panasonic and others

NETWORK	
Interface	1 Gigabit Ethernet (10/100/1000Mbps)
Type	Static IP, Dynamic IP, xDSL
DDNS	WNS, DynDNS, NoIP, WRS
Bandwidth limit	Supported
NTP	Server / Client / Both
Users	10 monitoring, 2 playback
Streaming	1 HD, H.264 stream, Same as recording setting 1 additional H.264 stream, nHD(640 x 360) 1 JPEG stream, nHD(640 x 360) for e-mail or mobile

SECURITY	
User level	1 admin, 10 users
User privilege	Menu, PTZ, Relay, Playback, Power, Copy, Network MIC
IP filtering	Supported

STORAGE & BACKUP	
Storage devices	2 internal SATA HDDs, 1 external eSATA Interface
File system	Proprietary file system, Data-loss protection against power-failure
Capacity	Max. 32TB with eSATA
Backup type	Multi-channel or Single channel avi file
Backup device	USB drive (2 ports)
S.M.A.R.T.	Temperature and Health checking

SEIRAL & I/O	
Serial port	1 RS-232C, 2 RS-485
Sensor input	8 Dry-contacts
Relay output	2 Relays

CONTROLLER	
Device	Front panel, IR remote, Joystick Keyboard, Mouse

SOFTWARE	
Web viewer	Monitoring / Event / PTZ / Playback with IE
Java viewer	Monitoring / Event/ PTZ with IE, Chrome, Safari
Mobile viewer	Monitoring / PTZ / LogView with iPhone & Android
CMS	Control Center Standard, Max. 1024 DVRs
SDK	ActiveX(COM) SDK

ENVIRONMENTAL & PHYSICAL	
Dimension	350(W) x 393(D) x 88(H) mm
Weight	8 Kg (No HDD)
Operating Temperature	5°C~45°C (41°F ~ 113°F)
Power	AC free volt (100 ~ 240VAC), 50/60Hz
Power consumption	Max. 40W Typical 30W
Approval	KC, FCC, CE, RoHS, HDcctv

HDC801H

VIDEO INPUT	
Video input standard	SMPTE 292M (HD-SDI)
Resolution / Framerate	SMPTE 274M(1080p, 1920x1080) : 25, 30, 29.97 fps Input format auto detection
Connectors	8ch, 75Ω BNC connector

VIDEO OUTPUT	
Video output	HDMI
	1, 4, 8 split-screen
	User defined sequence / Alarm pop-up
	1920 x 1080p via HDMI port

RECORDING	
Compression	H.264 / JPEG
Resolution	1920 x 1080
Rate	100fps/120fps at 1080p
Quality	1080p, 10 levels up to 12Mbps
Mode	Manual & Event / Schedule & Event / Continuous & Event
Schedule	24hrs / 7days

PLAYBACK	
Mode	Instant playback / search
Speed	Max. 100fps/120fps at 1080p
Search type	Time, Calendar, Timeline, Event, Thumbnail, Smart, Text
Block playback	24hours ~ 99days

EVENT & ALARM	
Event source	MD(Motion Detection), Sensor, Text, Video Loss
Event check schedule	24hrs / 7days
Event action	Buzzer, Relay, E-mail, FTP, Alarm pop-up
MD area	15 x 10
Sensor input	Dry contact (NO or NC selectable)
Text input	POS/ATM support, AVE VSI Pro/Hydra support

SYSTEM ALARM	
Alarm source	HDD fail, HDD almost full, Password fail, WRS fail
Alarm action	Warning message, Buzzer, E-mail, Relay

AUDIO	
Input/output	Input 4ch RCA / output HDMI, RCA
Compression	16KHz, 16bit sampling ADPCM
Direction	Both

PTZ	
Protocols	35 models including C1080, C1080PT-Z20, Pelco-D, Pelco-P, Samsung, Panasonic and others

NETWORK	
Interface	1 Gigabit Ethernet (10/100/1000Mbps)
Type	Static IP, Dynamic IP, xDSL
DDNS	WNS, DynDNS, NoIP, WRS
Bandwidth limit	Supported
NTP	Server / Client / Both
Users	10 monitoring, 2 playback
Streaming	1 HD, H.264 stream, Same as recording setting
	1 additional H.264 stream, nHD(640 x 360)
	1 JPEG stream, nHD(640 x 360) for e-mail or mobile

SECURITY	
User level	1 admin, 10 users
User privilege	Menu, PTZ, Relay, Playback, Power, Copy, Network MIC
IP filtering	Supported

STORAGE & BACKUP	
Storage devices	2 internal SATA HDDs, 1 external eSATA Interface
File system	Proprietary file system, Data-loss protection against power-failure
Capacity	Max. 16TB with eSATA
Backup type	Multi-channel or Single channel avi file
Backup device	USB drive (2 ports)
S.M.A.R.T.	Temperature and Health checking

SEIRAL & I/O	
Serial port	1 RS-232C, 2 RS-485
Sensor input	8 Dry-contacts
Relay output	2 Relays

CONTROLLER	
Device	Front panel, IR remote, Joystick Keyboard, Mouse

SOFTWARE	
Web viewer	Monitoring / Event / PTZ / Playback with IE
Java viewer	Monitoring / Event/ PTZ with IE, Chrome, Safari
Mobile viewer	Monitoring / PTZ / LogView with iPhone & Android
CMS	Control Center Standard, Max. 1024 DVRs
SDK	ActiveX(COM) SDK

ENVIRONMENTAL & PHYSICAL	
Dimension	350(W) x 393(D) x 88(H) mm
Weight	8 Kg (No HDD)
Operating Temperature	5°C~45°C (41°F ~ 113°F)
Power	AC free volt (100 ~ 240VAC), 50/60Hz
Power consumption	Max. 40W Typical 30W
Approval	KC, FCC, CE, RoHS, HDcctv(TBD)

HD400F-PDR

VIDEO INPUT	
Video input standard	SMPTE 292M (HD-SDI)
	Odd channels support DoubleReach™ (Total 2 channels)
Resolution / Frame Rate	SMPTE 274M (1080p, 1920x1080) : 25, 30, 29.97 FPS
	Input format auto detection
Connectors	4ch, 75Ω BNC connector
PoC	4ch, Power over Coax, Max. 16 W/ch, Total 64W
CoC	4ch, Control over Coax, Max. 57,600bps

VIDEO OUTPUT	
Video output	HDMI
	1, 4 split-screen
	User defined sequence / Alarm pop-up
	1920 x 1080p via HDMI port

RECORDING	
Compression	H.264 / JPEG
Resolution	1920 x 1080
Rate	120/100 fps at 1080p
Quality	1080p, 10 levels up to 12Mbps
Mode	Manual & Event / Schedule & Event / Continuous & Event
Schedule	24hrs / 7days

PLAYBACK	
Mode	Instant playback / search
Speed	Max. 120/100 fps at 1080p
Search type	Time, Calendar, Timeline, Event, Thumbnail, Smart, Text
Block playback	24hours ~ 99days

EVENT & ALARM	
Event source	MD(Motion Detection), Sensor, Text, Video Loss
Event check Schedule	24hrs / 7days
Event action	Buzzer, Relay, E-mail, FTP, Alarm pop-up
MD area	15 x 10
Sensor input	Dry contact (NO or NC selectable)
Text input	POS/ATM support, AVE VSI Pro/Hydra support

SYSTEM ALARM	
Alarm source	HDD fail, HDD almost full, Fan fail, Password fail, WRS fail
Alarm action	Warning message, Buzzer, E-mail, Relay

AUDIO	
Input/output	Input 4ch RCA / output HDMI, RCA
Compression	16KHz, 16bit sampling ADPCM
Direction	Both

PTZ	
Protocols	35 models including C1080, C1080PT-Z20, Pelco-D, Pelco-P, Samsung, Panasonic and others

NETWORK	
Interface	1 Gigabit Ethernet (10/100/1000Mbps)
Type	Static IP, Dynamic IP, xDSL
DDNS	WNS, DynDNS, NoIP, WRS
Bandwidth limit	Supported
NTP	Server / Client / Both
Users	10 Monitoring, 2 Playback
Streaming	1 HD, H.264 stream, Same as recording setting
	1 additional H.264 stream, nHD(640 x 360)
	1 JPEG stream, nHD(640 x 360) for e-mail or mobile

SECURITY	
User level	1 admin, 10 users
User privilege	Menu, PTZ, Relay, Playback, Power, Copy, Network MIC
IP filtering	Supported

STORAGE & BACKUP	
Storage devices	5 internal SATA HDDs, 1 external eSATA Interface,
RAID Level	1/5/10 Supported
File system	Proprietary file system, Data-loss protection against power-failure
Capacity	Max. 32TB with eSATA
Backup type	Multi-channel or Single channel avi file
Backup device	USB drive (2 ports)
S.M.A.R.T.	Temperature and Health checking

SERIAL & I/O	
Serial port	1 RS-232C, 2 RS-485
Sensor input	4 Dry-contacts
Relay output	4 Relays

CONTROLLER	
Device	Front panel, IR remote, Joystick Keyboard, Mouse

SOFTWARE	
Web viewer	Monitoring / Event / PTZ / Playback with IE
Java viewer	Monitoring / Event / PTZ with IE, Chrome, Safari
Mobile viewer	Monitoring / PTZ / LogView with iPhone & Android
CMS	Control Center Standard, Max. 1024 DVRs
SDK	ActiveX(COM) SDK

ENVIRONMENTAL & PHYSICAL	
Dimension	445(W) x 418(D) x 88(H) mm
Weight	10 Kg (No HDD)
Operating Temperature	5°C~45°C (41°F ~ 113°F)
Power	AC free volt (100 ~ 240VAC), 50/60Hz
PoC Power	DC 24V / 5A (Option)
Power Consumption	Max. 100W Typical 70W(1 HDD)
Approval	KC, FCC, CE, RoHS, HDcctv

HDC400F-PD

VIDEO INPUT	
Video input standard	SMPTE 292M (HD-SDI) DoubleReach™ support for 2 channels
Resolution / Framerate	SMPTE 274M(1080p, 1920x1080) : 25, 30, 29.97 fps Input format auto detection
Connectors	4ch, 75Ω BNC connector
PoC	4ch, Power over Coax, Max. 16 W/ch, Total 64W
CoC	4ch, Control over Coax, Max. 57,600bps

VIDEO OUTPUT	
Video output	HDMI 1, 4 split-screen User defined sequence / Alarm pop-up 1920 x 1080p via HDMI port

RECORDING	
Compression	H.264 / JPEG
Resolution	1920 x 1080
Rate	100fps/120fps at 1080p
Quality	1080p, 10 levels up to 12Mbps
Mode	Manual & Event / Schedule & Event / Continuous & Event
Schedule	24hrs / 7days

PLAYBACK	
Mode	Instant playback / search
Speed	Max. 100fps/120fps at 1080p
Search type	Time, Calendar, Timeline, Event, Thumbnail, Smart, Text
Block playback	24hours ~ 99days

EVENT & ALARM	
Event source	MD(Motion Detection), Sensor, Text, Video Loss
Event check schedule	24hrs / 7days
Event action	Buzzer, Relay, E-mail, FTP, Alarm pop-up
MD area	15 x 10
Sensor input	Dry contact (NO or NC selectable)
Text input	POS/ATM support, AVE VSI Pro/Hydra support

SYSTEM ALARM	
Alarm source	HDD fail, HDD almost full, Password fail, WRS fail
Alarm action	Warning message, Buzzer, E-mail, Relay

AUDIO	
Input/output	Input 4ch RCA / output HDMI
Compression	16KHz, 16bit sampling ADPCM
Direction	Both

PTZ	
Protocols	35 models including C1080, C1080PT-Z20, Pelco-D, Pelco-P, Samsung, Panasonic and others

NETWORK	
Interface	1 Gigabit Ethernet (10/100/1000Mbps)
Type	Static IP, Dynamic IP, xDSL
DDNS	WNS, DynDNS, NoIP, WRS
Bandwidth limit	Supported
NTP	Server / Client / Both
Users	10 monitoring, 2 playback
Streaming	1 HD, H.264 stream, Same as recording setting 1 additional H.264 stream, nHD(640 x 360) 1 JPEG stream, nHD(640 x 360) for e-mail or mobile

SECURITY	
User level	1 admin, 10 users
User privilege	Menu, PTZ, Relay, Playback, Power, Copy, Network MIC
IP filtering	Supported

STORAGE & BACKUP	
Storage devices	1 internal SATA HDDs, 1 external eSATA Interface
File system	Proprietary file system, Data-loss protection against power-failure
Capacity	Max. 16TB with eSATA
Backup type	Multi-channel or Single channel avi file
Backup device	USB drive (2 ports)
S.M.A.R.T.	Temperature and Health checking

SEIRAL & I/O	
Serial port	1 RS-232C, 2 RS-485
Sensor input	4 Dry-contacts
Relay output	2 Relays

CONTROLLER	
Device	Front panel, IR remote, Joystick Keyboard, Mouse

SOFTWARE	
Web viewer	Monitoring / Event / PTZ / Playback with IE
Java viewer	Monitoring / Event/ PTZ with IE, Chrome, Safari
Mobile viewer	Monitoring with PTZ, iPhone & Android supported
CMS	Control Center Standard, Max. 1024 DVRs
SDK	ActiveX(COM) SDK

ENVIRONMENTAL & PHYSICAL	
Dimension	290(W) x 232(D) x 65(H) mm
Weight	2.5 Kg (No HDD)
Operating Temperature	5°C~45°C (41°F ~ 113°F)
Power	DC24V, 5A
Power consumption	Max. 30W Typical 20W
Approval	KC, FCC, CE, RoHS, HDcctv(TBD)

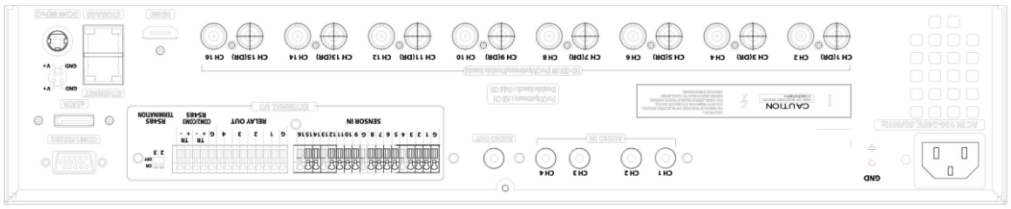
HDC400F

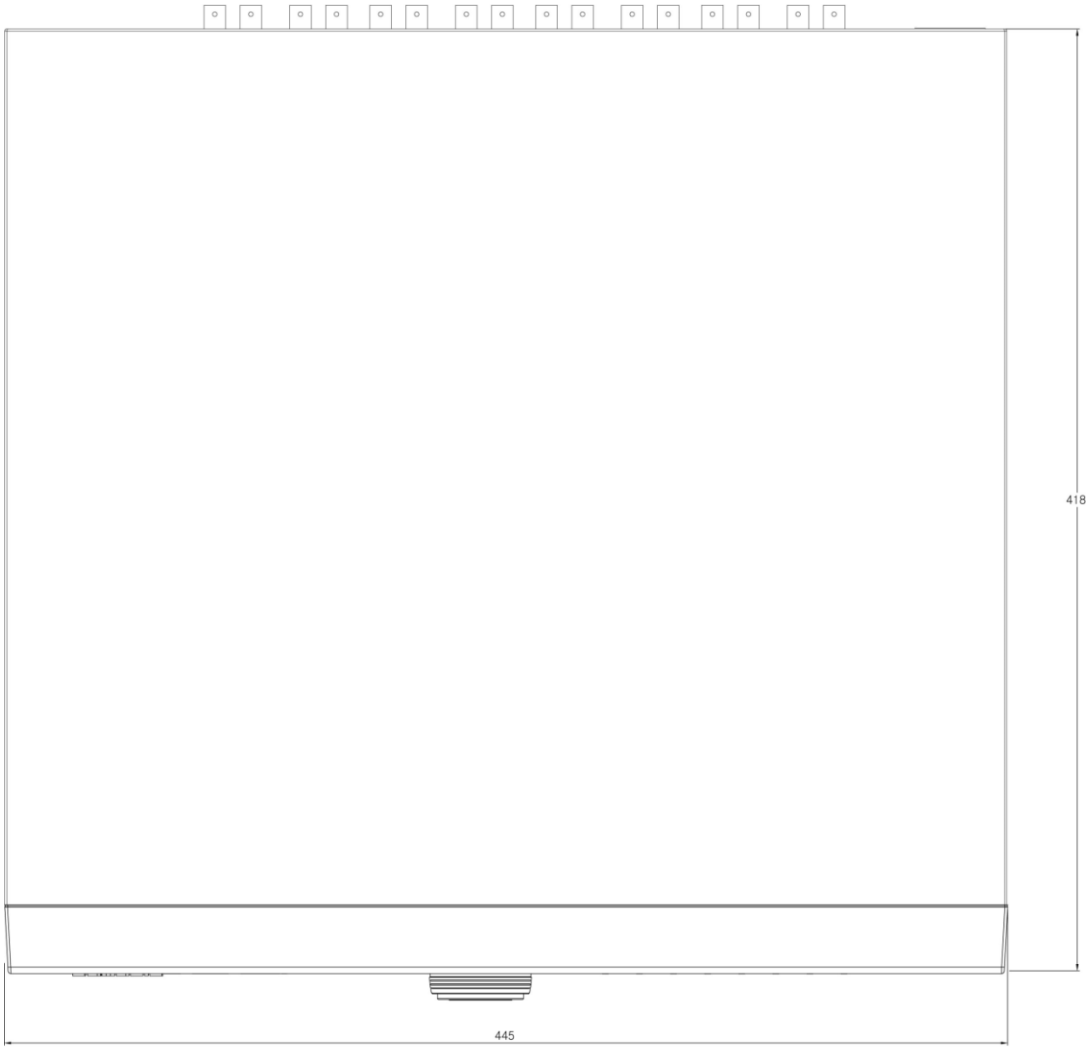
VIDEO INPUT	
Video input standard	SMPTE 292M (HD-SDI)
Resolution / Framerate	SMPTE 274M(1080p, 1920x1080) : 25, 30, 29.97 fps Input format auto detection
Connectors	4ch, 75Ω BNC connector
VIDEO OUTPUT	
Video output	HDMI 1, 4 split-screen User defined sequence / Alarm pop-up 1920 x 1080p via HDMI port
RECORDING	
Compression	H.264 / JPEG
Resolution	1920 x 1080
Rate	100fps/120fps at 1080p
Quality	1080p, 10 levels up to 12Mbps
Mode	Manual & Event / Schedule & Event / Continuous & Event
Schedule	24hrs / 7days
PLAYBACK	
Mode	Instant playback / search
Speed	Max. 100fps/120fps at 1080p
Search type	Time, Calendar, Timeline, Event, Thumbnail, Smart, Text
Block playback	24hours ~ 99days
EVENT & ALARM	
Event source	MD(Motion Detection), Sensor, Text, Video Loss
Event check schedule	24hrs / 7days
Event action	Buzzer, Relay, E-mail, FTP, Alarm pop-up
MD area	15 x 10
Sensor input	Dry contact (NO or NC selectable)
Text input	POS/ATM support, AVE VSI Pro/Hydra support
SYSTEM ALARM	
Alarm source	HDD fail, HDD almost full, Password fail, WRS fail
Alarm action	Warning message, Buzzer, E-mail, Relay
AUDIO	
Input/output	Input 4ch RCA / output HDMI
Compression	16KHz, 16bit sampling ADPCM
Direction	Both
PTZ	
Protocols	35 models including C1080, C1080PT-Z20, Pelco-D, Pelco-P, Samsung, Panasonic and others

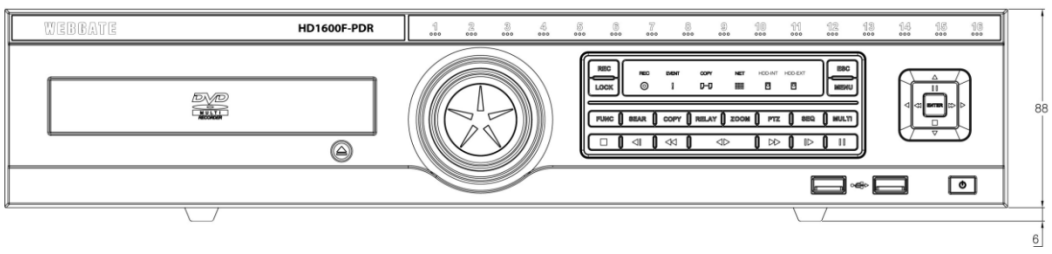
NETWORK	
Interface	1 Gigabit Ethernet (10/100/1000Mbps)
Type	Static IP, Dynamic IP, xDSL
DDNS	WNS, DynDNS, NoIP, WRS
Bandwidth limit	Supported
NTP	Server / Client / Both
Users	10 monitoring, 2 playback
Streaming	1 HD, H.264 stream, Same as recording setting 1 additional H.264 stream, nHD(640 x 360) 1 JPEG stream, nHD(640 x 360) for e-mail or mobile
SECURITY	
User level	1 admin, 10 users
User privilege	Menu, PTZ, Relay, Playback, Power, Copy, Network MIC
IP filtering	Supported
STORAGE & BACKUP	
Storage devices	2 internal SATA HDDs
File system	Proprietary file system, Data-loss protection against power-failure
Backup type	Multi-channel or Single channel avi file
Backup device	USB drive (2 ports)
S.M.A.R.T.	Temperature and Health checking
SEIRAL & I/O	
Serial port	1 RS-232C, 2 RS-485
Sensor input	4 Dry-contacts
Relay output	2 Relays
CONTROLLER	
Device	Front panel, IR remote, Joystick Keyboard, Mouse
SOFTWARE	
Web viewer	Monitoring / Event / PTZ / Playback with IE
Java viewer	Monitoring / Event/ PTZ with IE, Chrome, Safari
Mobile viewer	Monitoring / PTZ / LogView with iPhone & Android
CMS	Control Center Standard, Max. 1024 DVRs
SDK	ActiveX(COM) SDK
ENVIRONMENTAL & PHYSICAL	
Dimension	290(W) x 232(D) x 65(H) mm
Weight	2.5 Kg (No HDD)
Operating Temperature	5°C~45°C (41°F ~ 113°F)
Power	DC12V, 5A
Power consumption	Max. 30W Typical 20W
Approval	KC, FCC, CE, RoHS, HDcctv(TBD)

Product Dimension

HD1600F-PDR / HD1600F-R / HD1600F / HD1600M-PDR
HD800F-PDR / HD800F-R / HD400F-PDR *

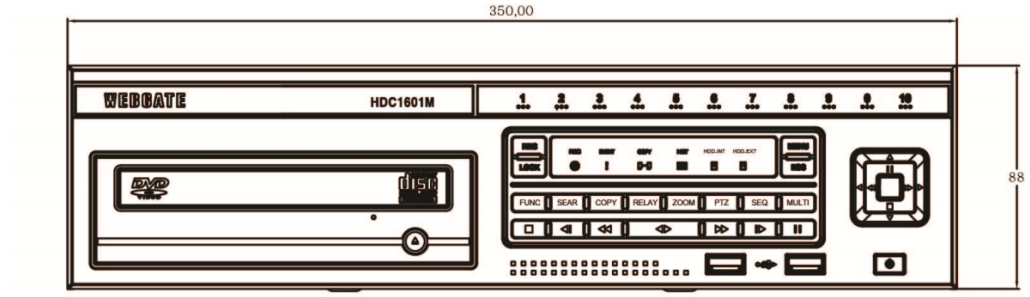


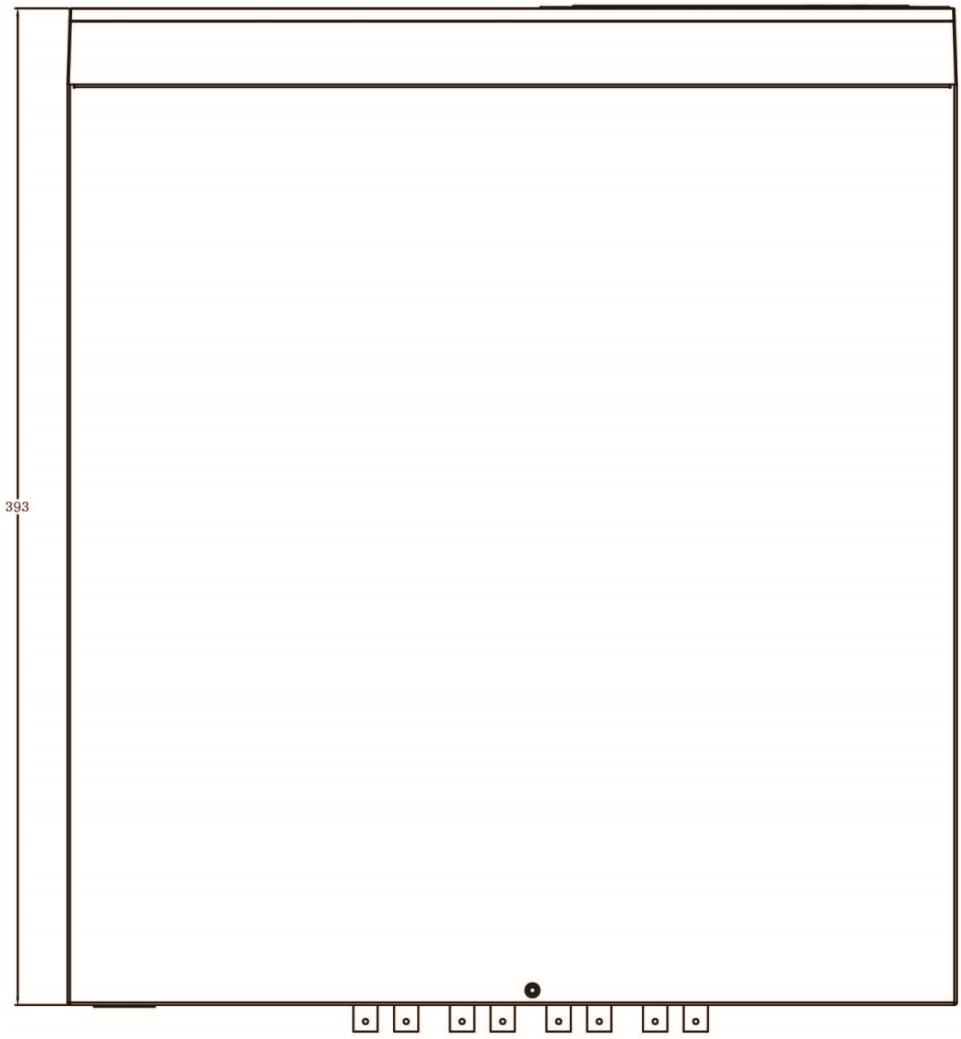


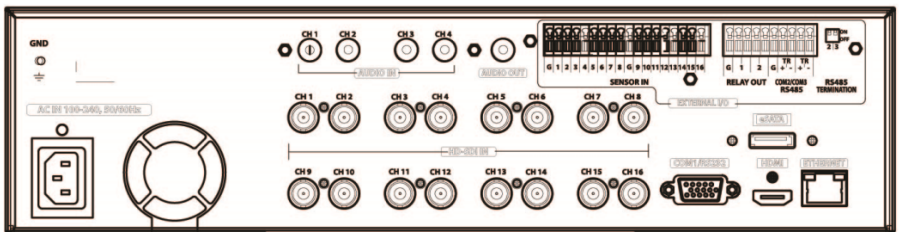


* Varies between different models

HDC1601M / HDC801F-PD / HDC801F / HDC801H *

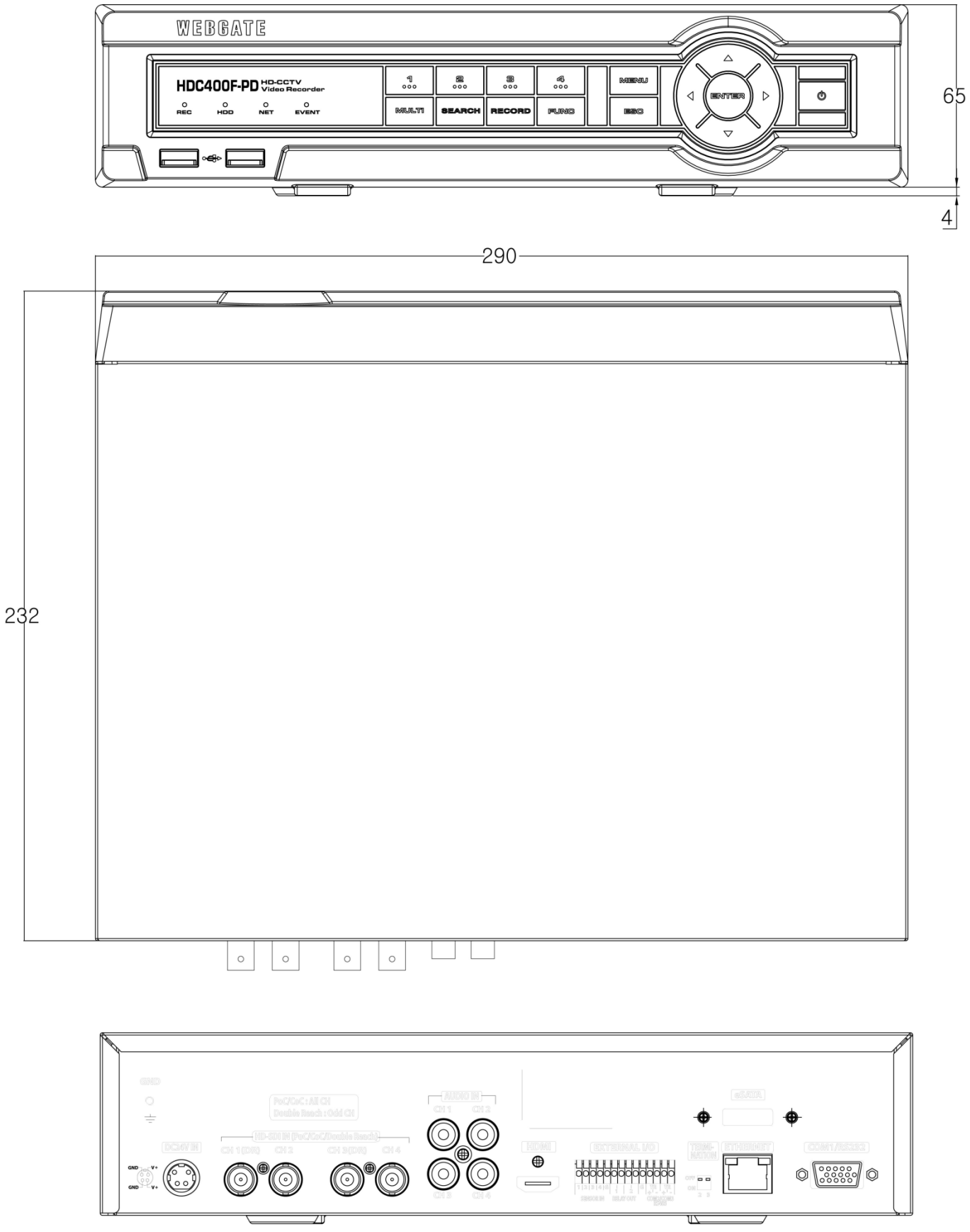






* Varies between different models

HDC400F-PD / HDC400F *



* Varies between different models

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3. Installation or explanation request on external device to be integrated with this product.

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   - ✓ Service request for any damage caused by other stuff coming into device.
   - ✓ In case of simple adjustment without disassemble.
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5. Others
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Warranty

Product name	Digital Video Recorder	Warranty term
Model name	HD1600F-R / HD1600F-PDR HD1600M-PDR / HD1600F HD800F-PDR / HD800F-R HD400F-PDR HDC1601M / HD801F-PD HDC801F / HDC801H HDC400F-PD / HDC400F	2 years after purchase
Date of purchase	/ /	
Warranty term	/ /	
Serial number		

Customer's address	Name	
	Contact	
Address of shop(Company name)	Name	
	Contact	

◈ Please fill out vacant area before selling products.

★ **For customer service** ★

Please read through product manual before claiming customer service.
Any simple malfunctions due to customer's misunderstanding on the product will be fixed by customer's side.

For requesting service?
Please inform details of malfunctions correctly.
Free or non free repair will be decided based on details of warranty card.

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The damage coming from following condition will be repaired at customer's cost.

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